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THE OSPREY.

AN ILLUSTRATED

MONTHLY MAGAZINE OF POPULAR ORNITHOLOGY.

VOLUME III.

SEPTEMBER, 1898, TO JUNE, 1899 (INCLUSIVE).



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PREFACE.

In bringing to an end and giving a table of contents and index to the third volume of the *OSPREY*, apologies and explanations are in order.

The first number of the volume had been issued for some time by the former Osprey Company before the present proprietors entertained any idea of purchase, and negotiations were not concluded till considerable correspondence had been exchanged between the contracting parties. Necessarily, therefore, the issue of the succeeding parts was much delayed and the October number did not appear until December 16th. The interval of time between the month for which the magazine was due and that when it was published was much diminished with succeeding numbers, but never entirely obliterated. The causes of delay need not be detailed; we will only express our regret that they should have resulted in the delay. So far as the editors are concerned, they can and will be on time. Delay is chiefly occasioned by tardiness in reading and returning proof, difficulty in getting illustrations when promised, and postponement by printers, especially when proofs are not returned on time.

For the new (fourth) volume stricter control will be exercised than was feasible with the present and the numbers will be published mostly on the days when they are due—the 15th of each month. The middle of the month rather than the first has been determined on so that the magazine may appear at a time of maximum rest from the general magazines, and because other journals of an analogous character—for example, *The Zoologist* of London—appear at a corresponding time. If for any reason, a delay of two or three days should occur, we would be in the fashion—our long established and ably conducted contemporaries, the *Auk* and the *American Naturalist* having set the example.

If the present Osprey Company have to admit culpability in respect to time, they need not apologize as to matter. In continuing the magazine, they tacitly assumed to do no more than their predecessors. They have, nevertheless, done much more than they were thus called upon to do. The previous volume of the *OSPREY* comprised only 144 pages including frontispieces and other plates. The present volume extends to 172 pages and includes 5 additional plates, (representing frontispieces). The second volume (like the first) contained no table of contents or other preliminary matter except the title page.

The third speaks for itself. Special fonts of letters have been purchased for the sole use of the *OSPREY*, and further, paper enough to last for a couple of years has been bought in anticipation of the threatened rise in price. With new dress, new facilities, new printing arrangements and new editors, we promise ourselves many new subscribers, and the subscribers themselves—old as well as new—rich treats in the future.

As to the new editors, we have the pleasure—and it is a very great pleasure—of announcing that arrangements have been made with a number of gentlemen to act as associate editors of the *OSPREY* for the future. Their names are well-known to the readers of the *OSPREY* as well as to ornithologists generally, and, with some of them at least, many of our readers are personally acquainted. The gentlemen are Mr. Robert Ridgway, the curator of the Department of Birds of the National Museum; Dr. Leonhard Stejneger, the curator of the Department of Reptiles, and especially eminent as an ornithologist; Mr. Frederic A. Lucas, curator of the Department of Comparative Anatomy, whose articles on the classification of various types are so much esteemed by ornithologists; Dr. Charles W. Richmond, chief assistant curator of the Department of Birds; Mr. Paul Bartsch and Mr. William Palmer, also of the National Museum, and Mr. Harry C. Oberholser of the Department of Agriculture, all of Washington. Further, Mr. Witmer Stone, who has charge of the ornithological collections of the Academy of Natural Sciences of Philadelphia, at one time the most complete in the world, will also kindly act as an associate editor.

Friends of the OSPREY need not be told that all of these gentlemen have contributed valuable material to the literature of ornithology and the magazine will benefit by their contributions as well as editorial assistance in the future.

The OSPREY will also have in future numbers contributions on the Avifauna of the parts recently acquired by the United States, the Hawaiian Islands, Cuba, Porto Rico and the Philippine Islands. The faunas of all these countries are very interesting, and that of the Philippine archipelago very rich.

Dr. Stejneger will furnish for the November or December number an illustrated article on the Birds of the Hawaiian Islands to which he has given special attention for several years.

Mr. Bartsch is preparing a series of articles on the Birds of the roadway in which he will give the results of his observations made while coursing on the bicycle on many roads.

Many contributions have been promised from other quarters. Among such will be articles on the Birds of the Bible by the Rev. W. F. Henninger.

Some time in the course of the year, or early next year, the Osprey Company will commence the publication of a new work on North American Birds. This will appear in the form of monthly supplements and as monographs of genera which may afterwards be combined in systematic order, and instructions for binding as well as title pages and table of contents will be furnished for each volume, and a complete index to the whole. Provision will also be made for those who prefer not to wait till the completion of the work, but would rather bind the supplements at the end of each volume of the OSPREY in which they appear. The series will be abundantly illustrated by portraits of the birds as well as figures of the nests and eggs when procurable. Other illustrations, such as those of scenery and places germane to the subjects, will be added in many cases.

Another feature of the OSPREY will be the publication, from time to time, of portraits with biographical notices of eminent ornithologists. This series eventually will be of great value, and indexes will be published at certain intervals to enable each one to be found without undue searching. The first of these—that of William Swainson—has been already prepared and will be published as soon as more urgent matter is disposed of.

Another department that will be commenced, as soon as there is a call for it, will be for the service of those who "want to know"—in other words, a column of "notes and queries". We are frequently applied to by correspondents for information respecting ornithological matters, and when the desired information shall appear to be of general interest, the questions and answers will be given.

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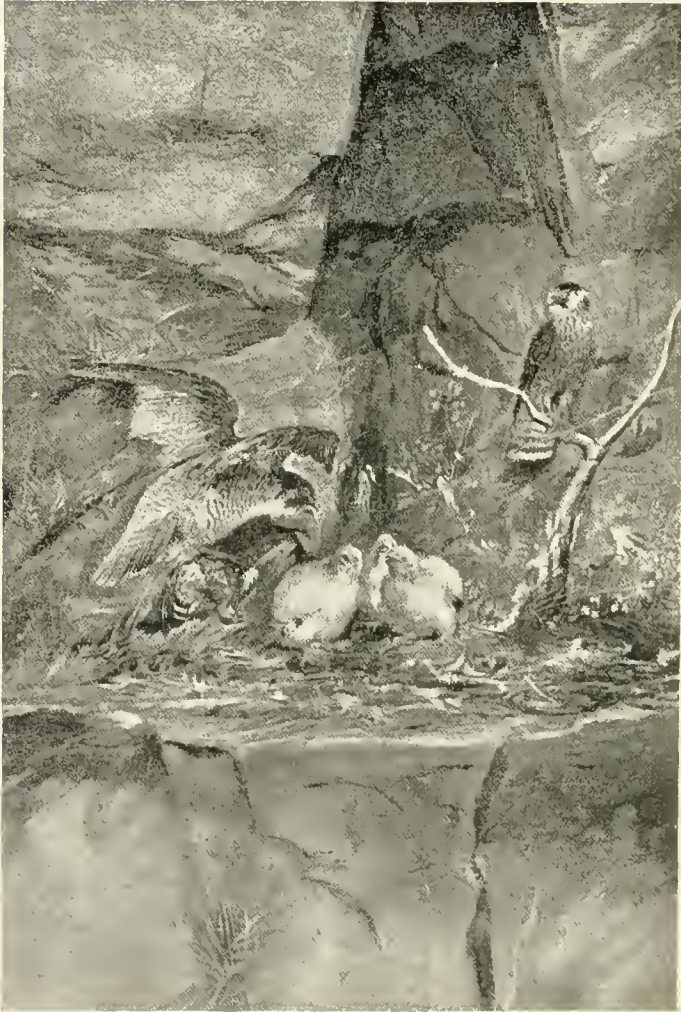
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CASTING A MOOSE'S NOSE.

See page 3.



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A FAMILY OF DUCK HAWKS.

FROM A REPRODUCTION OF A PHOTOGRAPH OF THE MOUNTED GROUP.

See page 3.

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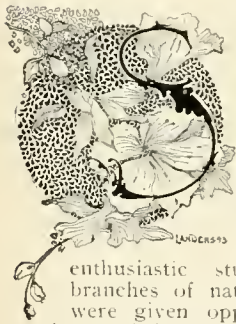
SEPTEMBER, 1898.

NUMBER 1.

TAXIDERMY AS AN ART.

BY JOHN ROWLEY.

Chief Taxidermist of the American Museum of Natural History.



OME twenty years ago, the seed of American taxidermy was sown by Professor Henry A. Ward, in Rochester, where in the spacious laboratories known as Ward's Natural Science Establishment the seed developed into a bud in the shape of a corps of young men who were enthusiastic students of the various branches of natural history. Here they were given opportunities to study and practice on their various lines, and above all else each man had the benefit of the experience of his fellow workers.

Previous to this, America could boast of but a few taxidermists, and these, chiefly foreigners and men past middle age and extremely secretive of their methods, did but little to advance the trade of taxidermy. But with the growth of new public museums came a demand for skilled taxidermists, and one by one these were drawn from that great school in Rochester. In the taxidermic laboratories thus established in the various museums throughout the United States these preparators were given full scope to expend their energies in producing the finest results; and the Rochester bud gradually unfolded itself until at the present time it may be said to have fairly blossomed out and opened to its fullest capacity. In proof of this statement I may ask where in the world are the examples of taxidermy better than in America? And why is this? Simply because these men and their followers have studied and experimented on new lines, thrown petty jealousies aside and promulgated their ideas on the subject, and held competitive exhibitions where specimens of the workmanship of different individuals could be exhibited side by side for a comparison.

A commercial taxidermist who has so many birds or mammals to mount in the course of a month, in order to meet his living expenses must of necessity get through them as rapidly as is consistent with good workmanship. But he has not the time to experiment on new methods. If the method he used a year ago worked all right, it will work again, and does. It will thus be seen that it has been left almost entirely for museum taxidermists to perfect the methods.

Not many years since almost every mounted deer's head was "stuffed" by crowding the skin full of a fibrous material such as straw. Later a "manikin" or dummy figure of the head, without the skin, was built up of wood and excelsior, coated with soft clay and the wet skin was sewed and modeled on over this. This method is now in general use throughout the country. It has since been found that even this method had a number of serious disadvantages, and although it was a step in the right direction, has again been perfected until now the manikin is modeled in plastic materials, every detail of the external anatomy as well as those of the mouth and nose worked out to their fullest extent and the dressed skin glued fast to the hard dummy figure. All mammals which will admit of it are now mounted in this way in the American Museum, the extent of the details of anatomy being of course governed by the length of hair on the skin which is to clothe the manikin.

In modeling the statue, the form and external anatomy are copied from life if possible. If a living example is not at hand, good photographs and sketches from life or plaster casts taken from the dead subject are used. The latter are of the utmost service as guides in modeling; and the time is not far distant when all scientific preparators will demand that a good plaster cast of all peculiarities of form of certain parts of a specimen be taken by the collector in the field. A subject such as a moose head, for example, requires this, as, if no studies of the shape of the nose were made, the genius does not exist who could remember all the points and reproduce them at will upon his model in the laboratory, much less describe them to another in such a way as to enable him to do so. A glance at the accompanying plate, "Casting a Moose's Head," will fully illustrate this idea. It will thus be seen that to model a manikin such as that for the zebra, which is here shown, requires not only careful study of proportions and form but the eye and touch of the sculptor as well.

A systematic collection of mounted birds is as necessary to a scientific museum as is the curator himself; but of late years it has been found that groups of birds with their nests and eggs or young, properly displayed with artificial foliage modeled from the natural plants, added a most pleasing and popular as well as scientific interest to the collections.

This method of exhibiting birds opened a great



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MANIKIN FOR ZEBRA, COMPLETED, READY FOR THE SKIN.

field for the taxidermic artist and the large series of bird groups now on exhibition in the American Museum, of which our plate of the Duck Hawk group may be taken as a fair sample, are a constant source of delight to the many visitors who daily throng the exhibition halls. In preparing these groups, as well as the series of mammal groups also in course of construction, the utmost care is given to details, each leaf and blade of grass being as carefully modeled as though it, and not the completed group, were the main consideration.

In order to follow out the details of construction of a group prepared on these principles, the taxidermist must familiarize himself with our

common plants at least, and be able to manufacture good imitations of them in wax or fabric. The taxidermist nowadays who permits his groups to be embellished with milliner's leaves and dyed grasses is woefully behind the times; and in competition with other groups containing faithful reproductions of the plants he desires to imitate, his groups must be adjudged second rate.

In conclusion, when we consider that the methods now used by the taxidermist are identical with those of sculpture and painting, the time is past when taxidermy, properly practiced, should longer be called a trade. It may now be placed on a level with painting and sculpture and be called truly an art.

THE BOOBYS OF THE REVILLEGIGEDO ISLANDS.

BY A. W. ANTHONY.

WITH PHOTOGRAPHS OF THE LIVE BIRDS BY THE AUTHOR.

DAYLIGHT of the morning of April 29, 1897, found us in tropical waters, nearly 200 miles off Cape St. Lucas, headed toward San Benidicto Island, still thirty-five miles to the southwest. As it became light enough to see distinctly, I discovered a large light-colored bird coming towards us, flying high and with an easy, powerful flight. Several times it circled about the schooner, even attempting to light on the ball at the topmast head. Its curiosity was only equalled by my own, for if I was the first naturalist it had ever seen, I, on my part, was making my first acquaintance with the Webster's Booby, a species that was seldom out of our sight during the six weeks that followed. The Webster's Booby is a new species lately discovered by Sir Walter Rothschild. The bird

was previously considered identical with the Red-footed Booby.

As we approached the island birds became more and more abundant. Blue-faced Boobys turned aside from their line of travel and came a mile out of their way to inspect the curious object that so seldom disturbed the waters around the Revillegigedo Islands.

At twenty miles from Benidicto a dozen or more of both species were following in our wake or trying to steal a ride on the bowsprit or the end of the main boom. A few Brewster's Boobys joined the procession, while high overhead floated a long line of man-o-war birds, so light and airy that they seemed to have severed all connection with earth and specific gravity. If a bird left the flock two were coming to take its

place, so that the flock was steadily increasing in direct ratio with our approach to the island.

When we had anchored the booms and rigging were soon taken possession of, and choice points of observation were constantly fought for during all the hours of day light while we were about the island. Nor was it possible to discourage the intimacy. If a booby was driven off the rail it immediately drove another away forward and took its perch, vociferating loudly at the impudence of man that he should so presume to disturb the rightful owner of this lone rock.

In rowing to or from shore a booby almost invariably rode on the bow or stern of the skiff if either was unoccupied, or if no better place was offered, on the rail beside the oarsman, as several times happened. If one remained quiet for a few minutes a booby would be very apt to light on his head or shoulder, where it remained as long as the person did not disturb it. On one occasion I was hauling a dredge from the stern of the skiff when a booby lit on my back as I bent over, peering down into the water over my



WEBSTER'S BOOBY ON NEST.

The bird is seen disgorging flying fish (the staple food of the ocean birds of these islands), as they often do when disturbed on their nests.



BLUE-FACED BOOBIES.

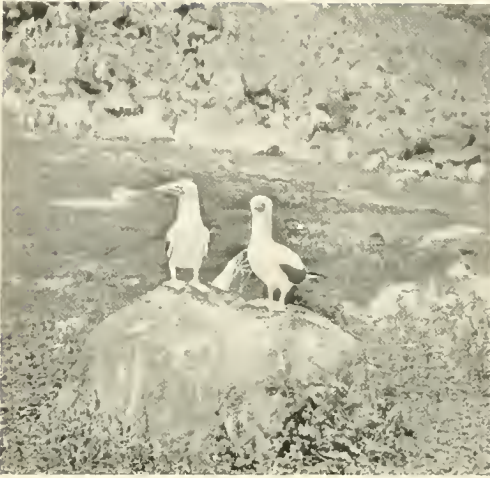
shoulder. As the net came up empty the bird uttered a contemptuous squack, an echo perhaps, of my own expression of disgust, and flew away.

On Benidicto and Socorro Islands all three of the species mentioned were nesting, the Webster's being most common and Brewster's being next in abundance, but on Clarion Island, 240 miles west of Socorro, no Brewster's were seen, though the other species were even more abundant than on Benidicto. About their nests their contempt for the genus homo was even more plainly shown. Most of the birds would leave the nest if somewhat disturbed. For example, a vigorous kick would dislodge even the most stubborn, but not until it had disgorged one or more flying fish, which form the staple diet of all sea birds in this region.

The Webster's Boobies were incubating when we arrived at San Benidicto, and a few nests with eggs of Brewster's were found, though most of the latter, together with all the Blue-faced, were gnawing empty nests. The nests of the Webster's were more or less bulky affairs of



BREWSTER'S BOOBY AND NEST.



BLUE-FACED BOOBIES.

other species, since while on San Benidicto we noted but a few eggs, though pairs of birds were everywhere seen defending the hollows in the ground, in which they evidently intended to lay at some future date. On May 19 we found some colonies of Blue-faced Boobys on Clarion Island, in which there were fresh eggs and young birds, and even a few well-grown young were seen. The nests were mere hollows in the coral sand, anywhere from just above high tide to the top of the island, at 500 feet altitude.

PRIMITIVE NESTING SITES OF THE CLIFF SWALLOW.

BY PAUL BARTSCH.

I HAD often seen large colonies of Cliff Swallows plastering their bulky nests under the protecting eaves of barns and sheds, but not until June 24, 1895, did I have the opportunity to observe their domiciles attached to rocky ledges, whence they derived their name Cliff Swallow.

I was at the time a member of a scientific expedition on the Oneota River, in Allamakee County, Iowa. We made a long journey, dragged our flat boat over many a shallow, enjoyed some very beautiful scenery, and were looking for a place where we might plant our tent for the night. It so happened that our abode was stationed south and at the side of a steep ridge which receded from the river at this point. The base of the ledge, a fine friable sandstone (St. Croix), had been eroded by the river and left a low arched exposure, some twenty feet in height. Under the shelter of this ledge a colony of Cliff Swallows had established its nests. A very pretty site indeed, but not a wise selection.

Soon after daybreak I set out to inspect the colony, but found most of the nests inaccessible. Those that could be reached from the boat contained well-fledged young. A little later a peculiar splashing and a great commotion among the swallows caused me to hasten to the bank. Some nest, unable to bear the ever-increasing burden, had parted from the ledge and carried many others with it in its downward course to the water. The sight of the swallows, flitting about the floating young, which were trying to

The nests were all vigorously defended by the birds, who greeted our approach with deafening shrieks and threatening bills. Indeed, their bill is not to be despised. It is as sharp as a bayonet, and is wielded with no little force, as my shins could testify after an hour's collecting among the nests. If the Webster's Boobys required a kick to drive them from their nests, the Blue-faced required a charge of dynamite. I have repeatedly put my foot under a sitting bird—gently to save the eggs—and thrown her as far as I could—with vigor to save my shins—but before I could grab the eggs, was driven back by a shrieking demon in snowy white that charged at me with agility surprising in so large a bird. On one occasion a bird came in from out at sea and with a scream threw itself between me and a sitting bird I was approaching, constantly moving about so as to interpose its body between its nest and the threatening danger. The defense being so spirited and gallant I concluded that the eggs were far advanced in incubation.

I several times found the present species sitting on large sea shells, which in shape and size somewhat resembled their eggs. The "boobies" seemed perfectly contented with the substitute, and I often supplied them with the shells after taking their eggs. These they immediately tucked under their breasts with their bills, and accepted the change as a matter of course. One nest, from which I took one egg, was supplied with two shells. Both were tucked away, but next day I found that one had been discarded. Others which were incubating two eggs accepted two shells in exchange and were sitting on them ten days later, when we left the island.

row ashore, and their cries of distress were pitiful. I set out to help them, gathered all I could find, placing them in niches in the rocks, which I lined with hay, expecting to see the parents feeding them. In this I was disappointed, for all the birds died a death of starvation. Several times did I see old birds ap-



THE CLIFF SWALLOW NESTS, FROM A PHOTOGRAPH.

proach to within a few feet of them, attracted by their cries, but in no instance was food brought to them. The parents would fly again and again to the place where the nest had been, but seemed unable to recognize their offspring under the changed conditions.

HUNTING THE ELEPHANT OF THE NORTH.

BY ROBERT E. PEARY.

EDITOR'S NOTE.—THE OSPREY has arranged with Lieutenant Peary and his publishers, the Frederick A. Stokes Company, for the publication of this article and photographs descriptive of a walrus hunt undertaken by the writer during the expedition "Northward Over the Great Ice" in 1893-4.—Photographs copyrighted, 1894, by the Frederick A. Stokes Co.

IT was a dirty afternoon, vicious snow-squalls chasing each other in rapid succession out of the Gulf and down the Sound, giving only occasional glimpses of the sharp ridge of Bastion Point, the eastern end of Herbert Island. About two miles and a half east of Cape Cleveland the bluffs end against the regular convex of a

up above high-water mark. A supper of venison, hardtack, and cocoa took the edge off the day's work, and everyone had crawled in under the tarpaulins and sails thrown over the boats, as falling snow aided the darkness to obliterate the desolate world.

The next morning we were up and had eaten our breakfast long before the late morning light was sufficient to enable us to start. Everything except oars, rifles, harpoons, and lines was left at the camp. The Eskimos were too slow and cautious with the walrus to suit me, and I had made up my mind to handle a harpoon myself, and arranged my boat accordingly, with, I must confess, some degree of confidence, as I had already tried my skill at throwing the harpoon with the natives, and found that I had nothing to be ashamed of, either as regards range or accuracy.



"Tearing through the water."

boulder delta, formed by an ice cap torrent, which for a month or two in early summer roars down a deep ravine with a burden of stones and gravel. Just in the angle where bluffs and delta meet there are a few paces of sandy beach, across which a boat may be drawn up until her stem is against the base of the bluff, and she is sheltered from the drifting ice, the rabid waves and the furious east winds by the breakwater of the delta. Niches in the rock offer facilities for fires, and from a perch well up the bluffs the eye commands the entire Sound eastward till it merges into Inglefield Gulf, westward until it is lost in the expanse of Smith Sound, and southward to the shore of Herbert Island. With the aid of a good glass, a walrus, or an "oogsook," can be picked out upon the floating ice anywhere within those limits. I had camped in this very spot in September three years before, after my memorable first encounter with the walrus, and here, late at night, I now directed the course of my fleet. It was long after dark when we beached the whale-boats and kayaks, and dragged them



WALRUS HEAD.

On the small, triangular decking at the bow was coiled my long, stout walrus line, one end fastened to the boat-ring, the other, with its steel-edged ivory barb, attached to the harpoon shaft, which lay across the gunwales against two small pins. Five or six coils of the line were detached



HOISTING A HUGE BRUTE ON BOARD.

from the rest and lay a little apart, so that they could be easily grasped and held in my left hand at the instant of launching the harpoon. On the deck, also, were a score of loose rifle cartridges and my three-barrelled gun, reduced now, since its last accident, to a length of eighteen inches, a regular Mafia weapon, in fact. Just behind me, and leaning against the starboard gunwale, was my Winchester repeater. It and the three-barrel both carried the powerful 45-90-300 cartridge. I expected to do most of my killing with the three-barrel, but the repeater was in readiness to repel the attack of a herd.

Lee held the tiller, five of the best Eskimos manned the oars, and I took my stand in the space forward of the bow oar. Lee had beside him, in the stern, another repeater carrying the same cartridge. Both boats and the three kayaks left camp at the same time, but soon separated, my boat going in one direction, accompanied by one kayaker, and the other boat and two kayaks taking another.

It was a dirty morning, with the snow-squalls chasing each other through the Sound, and the air tremulous with a low continuous roar, as of distant surf, above which from time to time rose the crash and thunder of capsizing and disrupting icebergs.

The setting of the scene was savage in the extreme. The barren, snow-covered shores, the dead-white, ghastly ice-floes and spectral bergs, driven here and there by winds and currents, and the black water swirling between, were rendered tenfold more dismal and desolate by the sombre twilight of the Arctic autumn.

We soon sighted a herd of some fifty of the

animals upon a cake of ice, but the day was too raw and cold for them to sleep comfortably, and they were restless, constantly fighting among themselves.

We pulled noiselessly towards them behind the screen of a small berg, till concealment was no longer possible; then with a low "Shake her up, innuksue," from me, the boat swerved out past it, and with all the speed of five iron backs and powerful pairs of arms, dashed at the quarrelling monsters. For an instant they were too startled to move; then the huge half-frightened, half-enraged brutes plunged bellowing for the water.

But I was already within range, and springing to my full height, with a motion that called every muscle from scalp to toes into play, I hurled my harpoon at the nearest, a big bull that had plunged directly at the boat. The heavy shaft with its trailing line flew through the air and caught the huge fellow fair in the shoulder, the iron-edged head pierced the tough hide, the shaft disengaged itself and floated loose, and, with a roar, the animal disappeared in a vortex of blood-stained foam and water.

Rapidly I tossed the remaining coils of line over-board. The boat's headway had now carried her close to the ice, and she was dancing like a cork in the waves made by the plunging animals. The next instant

the ponderous brute, with the momentum of a hundred feet of pain, rage, and fright-inspired motion, set the line taut, and changed it from a



KITTIWAKE GULLS ON THEIR NESTS.

From a photograph taken by Lieut. Peary on the great bird cliffs of Saunderson Island, North Greenland.

sinuous, flexible thong to a vibrant rod of steel, singing like a deep eolian, with a fierce note that

sent every drop of blood leaping through my distended veins, and set every nerve and fibre in my body quivering with suppressed excitement.

The boat reeled, quivered, whirled as on a pivot, her bow crashed in the ice with a shock which sent my excited Eskimo crew sprawling on their backs between the thwarts, then slid off, and the next moment we were tearing through the water, with the foam spurting from our bows and the water boiling under our stern.

For the first few yards, only the head of the animal, to which we were fast, was visible; then, with a rush and a splash, the herd rose like one animal close to and all about the boat. What savage-looking brutes they were! Their great heads armed with gleaming white tusks, their small, deep-set, bloodshot eyes, and their thick, bristle-studded lips opening to give vent to the most vicious roars.

A well-directed volley from the two Winchesters at the most pugnacious of the animals, Lee taking one side of the boat and I the other, sent the herd under again, and enabled me to cast a rapid glance about me, to see that everything was all right, and that we were not in danger of being smashed against any of the ragged cakes of ice which lay in our swift course.

The respite was only for a moment, but it gave us the opportunity to replenish the magazines of our rifles, and when the herd again, with a simultaneous rush that threw their bodies out of the water, rose roaring among the oar blades, the flash of the rifles in their very faces, and the bullets crashing against their massive heads, sent them under again.

Several times after this they returned to the attack, but even their iron skulls and savage per-

tinacity were no match for the almost continuous fire of our Winchesters, and at last, with three or four of their number dead, and several others leaving crimson trails behind them, the herd left the boat and gathered about the one to which we were fast.

Then, as opportunity offered, when the captive animal rose to the surface again, a single bullet from my three-barrel penetrated the base of his skull. There was an interrupted bellow as his head sank into the water, a few big bubbles rose to the surface and then the dead weight of two tons settled slowly upon the line, until it hung straight down from the bow of the boat, while the remainder of the herd dashed, roaring and bellowing away among the ice-bergs. The struggle was at an end.

Then the dead animal was towed to the nearest suitable cake of ice, a flat pan some fifty feet across, when everyone landed; the lines were transferred to the ice, the walrus pulled up till its head was out of water, and then, with the deftness born of long experience, my Eskimos cut holes in the surface of the ice-cake, a couple of slits in the thick hide of the walrus, rove an impromptu tackle and fall from the lines, and then all hands swaying on the line, and laughing and shouting like fur-clad demons, gradually warped the lifeless mass of the dead "elephant of the north" out upon the surface of the ice. As the hind flippers came fairly on the ice, the Eskimos dropped the lines, seized their knives, and swarming upon the carcass, in an extremely short time, had it dismembered and piled in pieces suitable for passing into the boat, each piece having a handle made with a slash of the knife through the edge of the tough skin.



"BIRDS OF PASSAGE."

BY J. M. KECK.

"But the night is fair,
And everywhere
A warm, soft vapor fills the air,
And distant sounds seem near;

"And above, in the light
Of the star-lit night,
Swift birds of passage wing their flight
Through the dewy atmosphere."

THESE lines indicate that Henry W. Longfellow was an observer of nature as well as a master of good English. He was aware of the fact that birds migrate largely by night. Ornithologists have discovered that most of our smaller birds, such as the warblers, vireos, creepers, kinglets, wrens, flycatchers, tanagers, orioles, thrushes, and native sparrows, make their semi-annual excursions almost ex-

clusively after sunset. Lighthouse keepers along the lake shores and sea coasts report myriads of these migrants striking against the glass and towers at all hours of the night, and large numbers of them receiving fatal injuries. The chief reason for this nocturnal migration doubtless is that these birds, being less swift of wing than the hawks and shrikes, find it safer to undertake long and exposed flights in the darkness. During daylight they rest and feed in somewhat sheltered places, where they can depend for safety upon their skill in dodging under cover, as they are wont to do in their native haunts.

That they often travel immense distances in a night has been determined by comparison of the notes of observers stationed at different points along their routes. The first appearance of a



BLUE-FACED BOOBY, WITH NEST AND EGGS.

Photographed from life, on the Revillagigedo Islands.

species will often be noted at a locality from 100 to 600 miles from the one where it was observed the day before. It is well known that our small land birds, as well as larger ones, cross the great lakes and the Gulf of Mexico.

Sea captains have reported flocks of them from 100 to 500 miles east of Nantucket, apparently *en route* from the Bahama Islands to Nova Scotia. They have, however, often been seen alighting upon floating sea weed or other objects to rest awhile when far out at sea. It is said that many small birds take passage across the Mediterranean on the backs of cranes and storks.

The poet also noticed that a warm, damp night is conducive to bird migration. Recent investigations confirm his statement. It is found that when the proper time arrives for the spring movement toward the north, after a night of low barometer and high thermometer the morning air will be filled with songs of new arrivals.

Birds possessed of superior strength and velocity of wing and that depend upon their speed in flight to escape from their enemies and also gather their food while on the wing, as swallows, swifts, and hawks, migrate during the day and rest at night. An English naturalist states that the common black swift of Europe has been known to attain to the speed of 276 miles an hour. Doubtless, when the exact time of the American chimney swift is taken it will be found to be equal to that of any foreign species. Few birds, however, are so fleet. Wild geese, for instance, rarely exceed 90 miles an hour.

Certain feathered tourists, of a bold and rest-

less disposition, travel either by day or by night. Robins, bluebirds, finches, crossbills, and larks belong to this class. Neither do they always make long flights, excepting in crossing large bodies of water or barren tracts of land, but flit along, feeding as they go, and perhaps averaging from 15 to 30 miles a day. Whether they make long flights or not depends largely upon the weather. In autumn a cold storm will drive them rapidly to the south; and in the spring, if their return to their nesting places has been retarded by unfavorable climatic conditions, a general warm wave will send them far to the north in a single flight.

Crows, blackbirds, bobolinks, pigeons, wild geese, and ducks migrate mainly in flocks. Most of our land birds move in waves, in which they are scattered over vast areas, only a few being seen in a place, but probably all keeping in touch most of the time, by sight or hearing, with the general movement. The procession generally straggles along for days in passing any point of observation.

Birds also differ in regard to the distance of their annual journeys. The white owl, snow bunting, butcher birds, tree sparrows, and red-poll linnets of the arctic regions are content with a visit to the Northern United States during the severest part of the cold season. Many of the common summer residents of the latitude of the great lakes go but little south of the Ohio River, while others resort far to the southland. The barn swallow, chimney swift, purple martin, indigo bunting, orchard oriole, wood thrush, nighthawk, and rose-breasted grosbeak are known to extend their tours beyond the national boundary. Some of the forest warblers that nest in Alaska and in the vicinity of Hudson Bay are said to journey hundreds of miles beyond the equator.

All birds do not migrate merely because they prefer a moderate temperature. It is often an expediency of subsistence.

Lieutenant Greely, while stationed at Grinnell Land, noted that the geese, ducks, and other aquatic birds that rear their young in the Frigid Zone move southward as soon as their food supply is cut off by the freezing of the mud and water. Doubtless one reason of the vernal migration is the necessity of locating their nests within regions abounding in summer with the larvae of insects specially adapted to the nourishment of their tender broods. There are birds, nevertheless, that do not migrate at all, at least so far as the species are concerned. Grouse, quail, nuthatches, chickadees, bluejays, hairy and downy woodpeckers, and most species of hawks and owls remain throughout the year in the Northern States. In the latitude of Kentucky, robins, bluebirds, thrushes, and many other birds that are elsewhere migratory are permanent residents.

Birds also vary as to the time of their migrations. The first to come in the spring, robins, bluebirds, blackbirds, and song sparrows, are the last to leave us in the fall. Later arrivals, as orioles, martins, swallows, and wrens, take their departure early in the season. The bobolink is usually the last to appear and the first to disappear. After the oat crop of the north has been harvested, he at once sets out for the rice fields of the south.

In the spring the males of nearly all species usually precede the females. In the early mi-

grating species, the latter generally do not reach the breeding grounds until from four to six weeks after the arrival of the former. The late



comers are often joined by their mates in a day or two.

That birds seek the same locality where they nested the year before is evident. It is no uncommon occurrence for a pair of a certain species to occupy the same nest, located in some peculiar and unusual place, for years in succession, indicating that they at least belong to the same family. Albinos and specimens otherwise

marked have been known to build in the same vicinity year after year. The avi-fauna of the East differs from that of the West. The Western bluebird does not have the cinnamon breast; the golden-shafted flicker is replaced in the West by the red-shafted; the whip-poor-will, by the poor-will; the nighthawk, meadow lark, bobolink, crow blackbird, house wren, grass finch, phoebe, wood pewee, chipping sparrow, and many additional species, by Western congeners. Although all these varieties mingle together during winter in the lower Mississippi Valley, in Mexico and Central America, each returns again to the area from whence it came. Slight variations in size, form, and color have been detected in some species inhabiting different sections of the same State, which would not be perpetuated if the same birds did not return to their native grounds.

Possessed, as we are to-day, of so much scientific knowledge, it seems strange to us that the migration of birds, like many another now well-known fact, is a discovery of the present century. When Gilbert White, about a hundred years ago, wrote the letters which constitute "The Natural History of Selborne," the question relating to the disappearance of the birds in autumn was under discussion among the naturalists of the world. Most of them appear to have been of the opinion that the swallows burrow into the mud, like frogs, at the bottoms of ponds; and that other birds hibernate, like bats, in caves and hollow trees.

ELKS PHOTOGRAPHED IN MID-AIR.

WE are indebted to Mr. Will H. Barnes, of Sioux City, Ia., for a photograph of his jumping Elks, here given, in which one of the Elks is shown in mid-air. The photograph is an excellent illustration of a remarkable feat. Mr. Barnes first undertook to break his Elks to drive in harness, which was accomplished after a year's time. It was while he was engaged in this preliminary instruction that he conceived the idea of teaching them to dive, having observed the readiness and utter fearlessness with which they went over a high bank into the Sioux River, taking Mr. Barnes with them much against his will. From that time he concentrated his effort on teaching them to jump, sparing neither time nor energy that his favorites might become skilled divers.

Their first plunge was made from a chute at a height of about five feet above the water, and for some time his effort was directed toward inducing them to dive from this height easily and of their own accord. When the weather in Iowa became too cold for his pets' daily plunges, he sought warmer waters in the South, and continued his teaching in Louisiana. By the end of the first winter spent in the South the Elks had learned to jump from a height of twenty feet, and were beginning to bring fame to themselves and to their owner.

Ringlette became rather the more expert, and soon learned the best and safest way to make the dives, striking the water head foremost with front feet extended. The buck Elk, Ring, is not

far behind, however, and will soon dive with equal expertness.

When Mr. Barnes began training these animals



THE JUMPING ELKS.

he had no idea of the success he would attain or the sensation their work would create. As he himself says, it has been his hobby, and he has kept at it for the love of animals and in the desire to see to how high a point of perfection their training can be carried.—Ed.

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EDITORIAL NOTES.

Our soldiers campaigning in Cuba have found much to fill them with horror and dispel from their minds any lingering illusions as to the glory of war; but nothing has more shocked and disgusted them than the part played by the vultures. Every skirmish which left the bodies of friend and foe lifeless in the dense underbrush was to these birds the occasion for a veritable feast, and they were not slow to avail themselves of the opportunity. It was not long before the American soldiers learned what the sudden appearance of these birds hovering over the chaparral meant, and the thought of what lay below and of the purpose of these winged scavengers filled them with disgust. Many times they tried to kill or drive them away and interrupt their horrible work, but the birds were not to be denied. One of the Rough Riders, writing home after the fighting at Baiquiri, told of these birds and of the effect of their appearance upon the men. One of his comrades, who had borne himself bravely in the presence of the enemy, went into violent hysterics at the sight of the buzzards and the thought of their disgusting mission. Had the men only known, the birds, instead of being their enemies, were, in reality, invaluable allies. In the thick growth of vegetation that clothes many of the hillsides and valleys of Cuba, the work of the burial parties is slow and difficult, and bodies are often overlooked in the search. The keen senses of the buzzard lead him unerringly to the spot. In many cases his work, nauseating and disgusting as it must be to contemplate, is the means of preserving the health and strength of many of our soldiers.

About a year ago an enterprising newspaper man got up a "fake" account of the extinction of the Wild Pigeon, which was widely copied, and still occasionally crops out in rural newspapers. In this article the Smithsonian Institution was made to offer large rewards for specimens and to make strenuous efforts to find living birds, but all in vain, and the species was pronounced extinct. Many letters, from various sections of the country, were received by the Institution, some asking about the size of the reward, others giving information about localities where live birds might be found, some correspondents had seen the birds recently, others wrote for directions to enable them to distinguish pigeons from doves. A man on Cape Cod sent a Mourning

Dove in the flesh and wished the reward sent him by return mail. Another said large numbers of Wild Pigeons were still to be found in Oregon and California, and other localities equally out of the range of the species—even Brazil and the West Indies—were given by various writers. One shrewd individual knew where the birds were in abundance, but could disclose the locality only upon receipt of the reward. Finally, as a result of this widely-circulated newspaper misinformation, the Smithsonian collections have been increased by a single immature Wild Pigeon, a gift from Mr. J. G. Taylor, of Owensboro, Ky., who obtained it July 27, 1898, about two miles east of that place.

A new \$5,000 monkey house has recently been opened to the public in Central Park, of New York City. Superintendent John B. Smith has purchased eleven additional monkeys, and now has a collection of forty-five in assorted sizes of monkeys and baboons. There is in the collection a large, muscular, and pugnacious Rhesus monkey, "John L." by name, who occupies a cage by himself, having killed three monkeys put in the cage to keep him company. He has been eighteen years in the Central Park Zoo, an unusually long period, as the average life of a monkey in captivity is four years.

Not long ago Charles W. Richmond, of the Smithsonian Institution, had occasion to compile a list of birds of the Hawaiian Islands, and found the total to be ninety-seven species, of which seven or eight are already extinct, with several others nearly so, and the remainder doomed. This list does not include introduced birds, of which there are several, like the English Sparrow, California Quail, House Finch, Mynah (*Acridotheres tristis*), etc.

Among their extensive list of fall announcements the Doubleday & McClure Company have three nature books. Besides "Birds That Hunt and Are Hunted," which we have mentioned as a companion volume to "Bird Neighbors," there are "Flashlights on Nature," life histories of familiar insects and plants, by Grant Allen, and "The Butterfly Book," by W. J. Holland, LL.D., with hundreds of examples in colored plates.

W. B. Richardson, the well-known bird collector, is spending a few weeks at his home in Boston. Mr. Richardson has made extensive collections in the West Indies, Mexico, and Central America, during the past ten years, principally for Mr. Cory and Messrs. Salvin and Godman. Of late he has been occupied with his coffee plantation at Matagalpa, Nicaragua.

According to the London "Field," last winter a fisherman observed a small bird on the back of a sea-gull; but when the gull came near the boat, it flew off, and tried to perch on the mast. It was evidently dead-tired, but eventually got on board, where the fisherman gave it shelter, and restored it to the land.

Dr. Edgar A. Mearns and First Lieutenant Jno. W. Daniel, Jr., are leaving for Puerto Rico, where, when duty lets them off, they expect to collect and write in collaboration touching the avi-fauna of the island.

G. F. Dippie, of Toronto, Canada, has been spending several months on a natural history expedition into Alberta, Northwest Canada.

General Notes.

U. S. MUSEUM VS. BRITISH MUSEUM.

An item respecting the series of birds' eggs in the British Museum went the rounds of a number of journals some time ago, in which it was stated that the collection "contains about 48,000 specimens, and is, no doubt, by far the most extensive collection of these objects in existence." It appears, however, from a recent census of the birds' eggs in the U. S. National Museum, that this statement is not wholly correct, the collection in the last named institution exceeding that of the British Museum by several thousands. The count, made by Mr. J. H. Riley, of the Division of Birds, is as follows: Reserve series, 52,513; duplicates, 11,759; total, up to June 30, 1898, 64,272.

It may interest readers of THE OSPREY to know that Dr. W. L. Ralph, of Utica, N. Y., is now Honorary Custodian of the Section of Birds' Eggs, having been appointed in November last, to fill the vacancy caused by the death of Major Bendire.—Chas. W. Richmond, United States National Museum.

HYBRIDIZATION OF FLICKERS.

It has been supposed that the Gilded Flicker did not cross or hybridize with other species of *Colaptes*. Last spring I secured two male specimens of this Flicker which show unmistakable signs of cross-breeding. The first one taken was a hybrid with the Red-shafted Flicker. The plumage was as usual in the Gilded Flicker, except the red tint in the secondaries of both wings. The second specimen secured was at the time breeding in a giant cactus. It is a cross between Gilded Flicker and the Yellow-shafted Flicker, or common Flicker of the Eastern States, and shows a faint, red, neuchal crescent.

A year ago I took, in the Huachuca Mountains, a female specimen of the Red-shafted Flicker, hybridized with either the Gilded or Yellow-shafted Flicker. It being a female made it difficult to determine which, though I am inclined to think the latter. The brown head markings were present, rubification of wings, etc., yet half of the tail was red and the other half yellow.—Geo. F. Breninger, Phoenix, Arizona.

A NEW BIRD FOR COLORADO.

Some time ago I had the pleasure of examining a fine collection of mounted birds, owned by Mr. Edwin Carter, of Breckenridge, Colo. This town is situated on the Pacific slope, in the mountains, at an altitude of 9,500 feet.

The collection contains many birds not recorded before from this altitude, but the rarest find is a Le Conte's Sparrow. This was taken by Mr. Carter October 2, 1886, near Breckenridge. It is, of course, an accidental occurrence, as it is the first record for Colorado and the first mountain record for the species, which is a plains bird not heretofore known west of Kansas.

The collection also contains a Slate-colored Sparrow, taken near the mouth of the Blue River, in Grand County, July 5, 1877, at nearly 9,000 feet altitude. This is one more record to show the summer residence of the bird in the

State and the highest altitude at which it has yet been taken.

Another unexpected specimen is the common Mockingbird, which was taken at Breckenridge, August 12, 1891. This is the first record for the west of the range in Colorado, and is 1,500 feet higher than any previous record.

A Boholink taken in South Park, May 21, 1876, is a more western record and from a higher altitude than any previously recorded.—W. W. Cooke, State Agricultural College, Ft. Collins, Colo.

CREEPERS' NESTS IN MISSOURI.

On May 16 I found, in Seneca Slough, a branch of the St. Francis River, in Dunklin County, Mo., three nests of the Brown Creeper, almost finished. Since finding the first nest of the species, three years ago, I became more and more convinced that the Brown Creeper is a regular, if not common, inhabitant of the Cypress swamps, where he is often heard, but very seldom seen. As his song may be mistaken for a variation of that of the Carolina Chickadee, evasion seems easy.—O. Widmann, Old Orchard, Mo.

BACHMAN'S WARBLER IN SUMMER.

The summer home of the Bachman's Warbler was unknown until the spring of 1897, when Otto Widmann found a nest and three eggs of the species on an island in the St. Francis River region of southeastern Missouri and northeastern Arkansas. The specimens were presented to the United States National Museum by Mr. Widmann. On May 24, last, Mr. Widmann wrote to THE OSPREY as follows:

"I have captured another set of three eggs of the Bachman's Warbler, May 14, on Buffalo Island, Dunklin County, Missouri. I had found the nest on the preceding day with the female sitting on three eggs. In order to be sure to get a full set, I left the nest undisturbed, but no egg was added and three seems to be all they lay. The nest was in a blooming blackberry bush, two feet from the ground, made of the same material and lined with black exactly as last year's nest. Several other pairs were watched, but their nests were too well hidden."—Ed.

COLONIZING OF BARN SWALLOWS.

In the May number of THE OSPREY Mr. Breninger speaks of the colonizing of the Barn Swallow as unusual. In the eastern part of Massachusetts I think this is not at all unusual. In the country I have found many large barns where there are about half a dozen pairs breeding. Last year I found a barn with fifteen inhabited nests, but this year one was found on May 21, with twenty-seven new nests. Most of these were just ready for eggs, but one held a set of six eggs. Under the barn with fifteen nests I noted last year a set of seven eggs, which is the largest set I have known this bird to lay. The large colonies I consider rare, but often find from six to ten pairs in a barn. My experience has been in the vicinity of the Blue Hills and on Cape Cod. I am certain of the species, and am also familiar with the Cliff Swallow.—F. B. McKechnie, Dorchester, Mass.

JOHN ROWLEY.

Some time ago the writer enjoyed a pleasant visit with Mr. John Rowley at the American Museum of Natural History. He was found superintending the making of a group of grey squirrels. The work was indeed interesting, and with Mr. Rowley's graphic explanations I soon felt that I knew a great deal about the work. My overconfidence led me to remark on the use of natural earth, at the time noting a large chunk showing the marks of picks and other tools used in extricating it from the ground, and a little mammal's nest opening at the side, while the top of the dried grass surface was being covered with a luxuriant growth of grass by the careful insertion of one blade at a time. I was somewhat abashed on being told that the earth was made from papier mache. "Your moss is equally as well made," was my next remark; but this proved to be the natural moss preserved by a glycerine solution. The work is truly wonderful; not less so when you can pick up and examine parts rather than look at the complete group in a glass museum case.

Mr. Rowley says that his thirst for knowledge of the ways of wild birds and beasts extends back to boyhood days. As he grew older all his spare time was given to the study of natural history. At school, many an hour was stolen from the legitimate lines of study and spent in dwelling upon his favorite hobby. Later, taxidermic "paresis" took a firm hold upon him, and he began to hunt through the libraries and publishing houses for works upon the subject of taxidermy. It is needless to say that perhaps fifteen years ago he failed to find any that satisfactorily explained the processes, so he finally hit upon a new plan. He procured a good fresh specimen of the Screech Owl and took it to an old German taxidermist, who was prevailed upon to permit him to look around the shop for a while. It goes without saying that his gaze was most frequently directed toward those operations in which the owl was most concerned, and here he secured his first practical information in bird taxidermy.

Later he began to visit the American Museum for the purpose of study and comparison. It was not long before he secured an introduction to the late Jenness Richardson, then chief of the Department of Taxidermy. He soon struck up a strong friendship with Mr. Richardson, and many pleasant excursions were made together in search of material for local groups. When in 1880 an opening occurred in the department, young Rowley was engaged as an assistant. Under Mr. Richardson's admirable instruction he shot ahead rapidly and soon learned to successfully mount, not only the smaller birds and mammals, but became initiated into the mysteries of the preparation of "manikins" for mounting large mammals, and the construction of groups. Mrs. E. S. Mowbride was at that time engaged in modelling artificial foliage for the bird groups then in preparation; from her he learned this work so important in making groups.

Upon the death of Mr. Richardson, in 1893, he became chief of the department. Under his direction the work has gone ahead rapidly and well, befitting the grand Museum that is in the process of growth in our American Metropolis.—W. A. J.

Recent Literature.

HOW TO NAME THE BIRDS. A Pocket Guide. By H. E. Parkhurst. New York: Charles Scribner's Sons, 1898. Flexible leather, \$1.00 net.

"Hast thou named all the birds without a gun?" was the question asked by the tender-hearted Sage of Concord, and the secret of such a feat is given by H. E. Parkhurst in this little volume. It is "a pocket guide to all the land birds and to the principal water fowl normally found in the New England States, New York, Pennsylvania, and New Jersey, for the use of field ornithologists." Every one who has studied birds has at some time felt the need of just such a little companion as this concise little handbook, that can be easily carried in a pocket, to be called forth when needed to aid in the identity of any feathered stranger that he may meet.

The system of classification is very simple. As in many of the popular hand-books of recent years, Mr. Parkhurst has disregarded the classifications which to the beginner may seem long and laborious, and has adopted one of his own that must attract by reason of its simplicity and eminent usefulness.

The main and most interesting classification which Mr. Parkhurst has adopted is that referring to the time when a bird may be found in any given locality. Four groups are used, all birds falling naturally into one or another of these groups. The first comprises those that come from the south in the spring and return in the autumn, being known as Summer birds; the second, those that come from farther north in the winter and go back there when warm weather begins in the spring, earning for themselves the name of Winter birds; the third group consists of those that come from the far south in the spring and journey far to the north, the Migrants; and the fourth group comprises those that remain in the same locality the year round, and are known as Permanent.

Another division is made on the basis of the prevailing color. Black and yellow are the most common and easily distinguished of bird colors, and therefore the first two classes in this new sub-division contain the birds marked with one or the other of those two colors. The neutrals form a third class, the black and yellow, combined, a fourth, and those marked with blue or red the fifth and last class.

Another interesting feature is that below the title of the species is a summarized color description in just a line divided into two parts, the first referring to the upper side of the bird and the other to the lower.

These classifications will overcome much difficulty and confusion in naming a bird, since those characteristics are chosen which are most apparent to the ordinary observer.—A. B.

OUTDOOR STUDIES. A reading book of Nature Study. By James G. Needham. New York: American Book Company, 1898. Cloth, 40c.

A very good expression of the constantly increasing interest in nature study is this excellent little book, "Outdoor Studies." Professor Needham has been all his life a close student of animals and plants, and his book testifies to the zeal and enthusiasm with which he pursues his

work. The range of subjects treated is not wide; they are all familiar to most of us, and may almost be seen from our doors. The book is written more especially for the boys and girls who are just beginning to see the world of life and beauty that lies at their feet, and is intended to lead them on to a closer and more exhaustive study.

The very first chapter treats of a humble little plant that every country-bred boy knows at sight by its expressive common name of "butter and eggs." Naturally enough, the same chapter treats of the inseparable companion of "butter and eggs," when in the flower, the bumble-bee. The story of the skillful manner in which the bumble-bee secures the nectar from the flower is well told.

The description of the chipmunk and his habits of life must recall to every one the deep cool shade of the woods and this vivacious little animal skipping along some rotting, moss-covered tree-trunk, fallen to the ground, or sitting erect and motionless watching with bright eyes the movements of the intruder on his domain. The fifth chapter is a defense of the crow and a strong plea for his economic usefulness.

The entire book is written in the same strain as the chapters mentioned. In order to prevent the beginner from being terrorized by an array of long scientific names on the first page, such names are grouped together in the back of the book, reference being made to them by numbers inserted in the text.

"Outdoor Studies" is no dry compilation. It is evidently the work of one who, while observing carefully and accurately, has seen all things with an artist's eye, and has written for love of the animals and plants he describes.—A. B.

AT YOU-ALL'S HOUSE. By James Newton Baskett. New York: The Macmillan Company, 1898. Cloth, \$1.50.

This little volume with its plain, homely title is a veritable pastoral, having for its setting an obscure corner of the great State of Missouri. The author is evidently a man who has lived close to Nature, and communed with her in all her varying moods, from the time when the first green begins to show in the willows by the "branch" till the year fades away in the smoky golden haze of the Indian summer days. He has run the thread of a pretty little love story through the pages of his book, but they are also replete with bird-lore, and with examples of shrewd observation of the things of out-door life.

In fact, the text, if such it may be called, of his whole teaching is the nearness and interrelation of the lower and the higher forms of animal life. The boy, Shan, who is described as just awakening to another life at the vivifying touch of love, sees everything in a new light, sometimes distorted by passion, but more often gleaming and glowing in a mellow radiance.

Like every one else he feels the tremendous mystery with which Nature cloaks herself and hides her working. At one such time he says in his simple dialect, "I read er poem once about birds settin' on the telegraph wires and not knowin' that great messages were passin' through their grasp, and I remember that I pitied 'em, and now, the great world seems throbbin' under my feet, and I—I—can only hear the hum."

As Rudyard Kipling, in his *Jungle Tales* has caught the spirit of the time of "new talk," so this author has appreciated the tremendous effect of the spring-time of the year upon a life that is itself just budding and swelling into new strength and new ambitions. It is more than literary, it is real life; it "smells of earth." As we read it, Nature becomes to us more than a mere material environment; we see in the simplest processes that go on day by day around us, the justification of our faith in the great, eternal verities of all life.—A. B.

THE NATURALIST'S DIRECTORY. London: L. Upcott Gill, 170 Strand, W. C., 1898. Paper, 1s.

This directory is for the use of students of natural history, and collectors of zoological, botanical, or geological specimens, giving the names and addresses of British and foreign naturalists, natural history agents, societies, and field clubs, museums, magazines, etc. The names of naturalists are principally those of the British Isles.

OTHER BOOKS RECEIVED.

'The Art of Taxidermy' by John Rowley. New York: D. Appleton & Co., 1898. Cloth, \$2.00. (With the article which Mr. Rowley has written for this number of THE OSPREY there appear three illustrations from this book.)

'Familiar Life in Field and Forest' by F. Schuyler Mathews. New York: D. Appleton & Co. Cloth, \$1.75.

'Birds of the United States East of the Rocky Mountains.' A Manual for the Identification of Species in Hand or in Bush. By Austin C. Apper. New York: American Book Co., 1897. Cloth, \$2.00.

'The Birds of Indiana.' A descriptive catalogue of the birds that have been observed within the State, with an account of their habits, by Amos W. Butler. From the 22d report of the Department of Geology and Natural Resources of Indiana, 1897. W. S. Blatchley, State Geologist.

'With Nature and a Camera.' Being the adventures and observations of a Field Naturalist and an Animal Photographer, by Richard Kearton, F. Z. S. Illustrated by 180 pictures from photographs by Chery Kearton. London: Cassell & Co. Cloth, 21 shillings.

California Department.

EDITED BY DONALD A. COHEN, ALAMEDA, CAL.

NEWS FROM THE McILHENNY EXPEDITION.

The following is extracted from the Alameda "Daily Argus," July 28, printed from a letter from Mr. E. A. McIlhenny, of Avery's Island, La., written from Point Barrow, Alaska, March 31, to Mr. H. R. Taylor, of Alameda. Mr. McIlhenny states that although his expedition had a close call to starvation, they are in good health, and with his provisions and with those at the whaling station 300 men have been saved.

He further states: "When we get our collection of natural history specimens down, it will be the most valuable one ever brought from the Arctic. We have made new finds in birds and mammals, and some surprising records.

"The relief expedition sent to the ice-bound whaling fleet by the Government brought 400 reindeer for food on the 20th instant, which were not needed, as we have killed over 1,000 caribou up to date."

Mr. N. G. Buxton, graduate of Leland Stanford, Jr., University, Cal., and Mr. W. E. Snyder, of Beaver Dam, Wis., are Mr. McIlhenny's assistants. A letter from Mr. Buxton appears in the Alameda "Daily Argus," July 29, in which

he states that the past winter has been one of the mildest ever known in Alaska. The coldest day was February 22, when the thermometer registered 47 degrees below zero. The mean daily temperature for December was 7.95 degrees below zero.

August 11.—The Alameda "Daily Argus" tonight publishes the statement from a whaler who spent the winter in the ice with the whaling fleet and the McIlhenny expedition. It is a bitter attack on Mr. McIlhenny, and states that the reports circulated about Mr. McIlhenny's generous contribution of his provisions to the short-rationed whalers is false. The attack is vehement, and we all know of what a disgruntled whaler is capable. We can only judge this attack to have been made of "whole cloth," and until we have positive proof of its truthfulness, will give it no credence. What we have heard and seen of Mr. McIlhenny proves him to be a thorough naturalist and a gentleman of the highest type, and it seems absurd to imagine that he should have refused to share his provisions with starving humanity, especially when he took along a three years' supply in case of an emergency.

ITEMS.

Mr. H. O. Gaylord, of Pasadena, a member of the Cooper Ornithological Club, visited Alameda during the first week in August, on his way to Baltimore, Md., where he goes to study dentistry.

The Cooper Club's September meetings have always been the best attended and the most important meetings of the year, and have all been held at the residence of Mr. C. Barlow, in San Jose. Mr. Barlow is making extra efforts to give the attending members a royal time on the 3d of September.

COOPER ORNITHOLOGICAL CLUB.

The Northern Division met, May 7, at Alameda, at the home of Harold C. Ward, President. W. Otto Emerson in the chair. Mr. Jos. Grinnell, of the Southern Division, was present as a member. W. W. Price, of Stanford University, and John M. Welch, of Copperopolis, were elected to active membership. A letter from W. B. Sampson, of Stockton, Cal., reporting the snaring of numbers of small birds near that city by Italians, who used large fish-nets as snares, was read and discussed. Messrs. H. R. Taylor, A. M. Shields, and R. S. Wheeler were appointed a committee to prepare plans for the prevention of such bird destruction. Mr. Emerson made some remarks, showing the inestimable harm done by such practices in Italy.

Resolutions proposing Mr. Walter E. Bryant for honorary membership in the club were given a final reading, having been concurred in by both divisions, and the name of Mr. Bryant was added to the list of honorary members.

Two papers from the Southern Division were read—"Nesting of the Western Yellowthroat," by H. J. Leland, and "Breeding of the Least Tern in Los Angeles County, California," by A. I. McCormick.

Mr. Barlow read a letter from Wm. Steinbeck, of Hollister, reporting his taking an egg of the

California Condor on April 10, in which incubation was well along. The egg was collected in San Benito County.

Mr. Grinnell read a paper, "The Rhinoceros Auklet at Santa Catalina Island," describing a series of adventures in making a collection of these birds. This will appear, in part, in a later issue of THE OSPREY.

The last paper of the evening was read by H. R. Taylor, entitled "The Nidification of the California Condor." An egg of the Vulture, taken from the nest this year, was displayed. This article will also be published in this magazine.

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The Southern Division met, July 30, at the home of Mr. G. Frean Morcom, in Los Angeles. Rev. F. Reiser, of Pasadena, was elected to membership. The name of H. Rising, of Los Angeles, was proposed for membership. Horace A. Gaylord tendered his resignation as treasurer, being about to leave the State, and was tendered a vote of thanks. H. S. Swarth was elected to fill the unexpired term.

The office of secretary being left vacant by the departure of Mr. Jos. Grinnell for Alaska, Mr. Howard Robertson was elected to fill the term. Mr. H. Rising exhibited some skins, nests, and eggs collected by Mr. O. W. Howard in Arizona the past spring, viz.: skins, nests, and eggs of Olive Warbler, Audubon's Warbler, Lucy's Warbler, Gracie's Warbler, Plumbeous Vireo, Coates' Flycatcher, and Scott's Oriole; also sets of Flammulated Screech Owl, White-winged and Mexican Ground Dove, and skins of the Flammulated Screech Owl and Western House Wren.

Mr. H. S. Swarth exhibited a pair of Fulvous Tree Duck, also skins of Semi-palmated Plover, Black-throated Sparrow, and White-crowned Sparrow, all taken in Los Angeles County. A general discussion and refreshments followed.

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The Northern Division met at the home of Harold C. Ward, in Alameda, July 2. The Committee of Bird Protection made a partial report showing encouraging progress, and reported that the State Fish and Game Commissioners had interested themselves in the work of the club. The president appointed three additional members to the committee, Messrs. R. C. McGregor, W. B. Sampson, and R. H. Beck, making now a committee of six; the three previously appointed being H. R. Taylor, A. M. Shields, and R. S. Wheeler. Good work is promised, as the committee is energetic and fully in earnest.

The following papers were read: "Nesting of the White-throated Swift," by Harold C. Ward; "The American Barn Owl in Captivity," by Donald A. Cohen. Mr. Claude Cummings, of Danville, presented a paper recording the finding of a set of eggs of the Horned Owl (var. *saturatus*?) on the ground on April 24. The nest was on a canyon-side beneath the shade of several large live oaks, placed on the ground among some short weeds and vines, a shelf on the hillside having been scratched out by the owl, with no vestige of the nesting material used. There were several old hawk's nests near by, and one within a quarter of a mile, so the nesting site is peculiar and unusual. The date was also a late record, the eggs being but slightly incubated.—Publication Committee.



Giant Cactus (*Cereus pringlei*). See p. 23.



Fouquieria columnaris. See p. 23.

THE OSPREY.

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VOLUME III.

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NUMBER 2.

Original Articles.

INCIDENTS IN THE LIVES OF PURPLE FINCHES.

By MRS. C. P. WEBSTER, Franklin Falls, N. H.

"PURPLE" Finch is a misleading name that became applied to this bird, not because his feathers were purple, but because one of the early bird artists falsely colored him.

For the first year or more, the brothers and sisters in the Purple Finch family are dressed alike in mixed brown; after which time the young gentlemen don a crimson garment that makes them truly conspicuous among feathered folk. They may well be proud of their brilliant plumage and seek to display it to best advantage, when they "a-wooing go." At such times they erect their head feathers, spread and trail their wings, stretch their legs, strut as if on tip-toe, and fly back and forth before the objects of their affections with love songs bubbling from their throats. The lady birds are the most demure, undemonstrative little dames one ever saw. They apparently pay not the slightest attention to their lovesick swains, but either sit fluffed up on a branch looking neither to right nor left, or continue to fill their stomachs as if they expected to provide their own living always, married or single.

Mr. Nehrling says, "It is extremely hard to find the nest of the Purple Finch in the dense evergreens, the bird taking great care not to betray the location." Fortune favored me in not only finding the nest but in being able to watch its construction. It was composed of rootlets and grasses, neatly lined with horse hair, and placed in an evergreen close to a neighbor's sidewalk, only six feet above ground.

The carmine coated gentleman did not carry a twig—not he! But he accompanied his mate, carefully watched to see that every piece she brought was properly placed, and helped drive off trespassers that tried to steal dried grass or rootlets from the roadside where theirs were gathered.

The nest was completed in four days; on the fifth one egg was deposited, and then one each succeeding day until four were laid. They were pale greenish, spotted with dark markings, particularly at the larger end.

Sitting began at once and the female was so fearless one could go directly to the tree where she sat, look at her—even pull the tree a trifle to one side—and she would not fly, until her great fright eight days after sitting began. That day of terror commenced with the pruning of the evergreens on the lawn—her tree included. This caused her great anxiety and distress, but the shearer finally passed on and she returned to her duty. After the trees were made symmetrical, the lawn was mowed, the walks straightened, the grass reclipped on their borders and the concrete carefully swept. All this work, which lasted from early morning until late at

night, necessitated the laborer's passing the Finch's tree many times, until she became so nervous she flew when any one stopped near.

About this time, too, the bird passed through a domestic experience. Her brilliant companion disappeared; so this practical woman in feathers, having decided it was too hard to bring up four children alone, put aside widow's weeds and took to herself another husband, a young man without so much as a crimson feather for a button-hole bouquet. He took up the vacated station of her former partner and brought her food occasionally, presumably performing the usual duties of a lord of a household.

The eleventh day after the fourth egg was laid, the birdlings came out of their shells. Nothing uncommon occurred until the fourth day later; then a tragedy took place which resulted in death to the mother bird and three nestlings. I suppose the murderer to have been a cat, but was not there to see the sad affair.

Considering that the step-father was young and unused to the care of children, one can scarcely wonder that he did not make a success of raising the lonely fledgeling. He went to it a few times and probably fed it, but he never stopped to cover the callow thing—that was more than he had bargained for, so the step-child died before the day was done.

This lost opportunity to watch home training in a Purple Finch's family was partly made up to me a little later, when a beautiful male brought his offspring to our yard to teach them how to sing. Father Finch sang his complete song over and over again: "Ah, twitter-witter-witter-witter *tree*-ah, twitter-witter-witter, ah, sweet?" the "tree" being the highest and the "sweet," in rising inflection, the sweetest note. The Finch's song gives you the idea that he is so brimming full of happy emotions he fairly spills over.

The young birds entered upon their musical studies with ardor. No young cockerel ever practiced his crow more energetically than did they their little song. They sang with raised crests and nervous steps back and forward. Were they keeping time to the music? The song had none of the gush and bubble of a mature Finch's, was on a lower key, and failed utterly in reaching the one high note. They seemed to know this and try for it but they lacked sufficient control over their vocal apparatus. Their song, repeated again and again, was like this: "twitter-twee, twit-ter-twee."

In a day or two, one young bird added a third "twit-ter-twee," a repetition of the second phrase, and in a few days more these engaging songsters left our vicinity.

A TRIP ACROSS LOWER CALIFORNIA.

By GEORGE P. MERRILL, Washington, D. C.

(With 5 Plates.)



THE desert is ever interesting. There is a fascination about these arid wastes for which it is difficult to account, but which once experienced can never be eradicated. The barren stretches of sand and rock, the sharp shadows, the paucity of animal life, the striking peculiarities of plant life, and above all the silence and solitude,

produce impressions which must be felt to be appreciated.

In most cases a desert is barren simply through lack of a proper amount or distribution of moisture. In few instances is the soil actually incapable of sustaining vegetable life. Give it but water, and it becomes a garden spot. Not the least of many striking things in desert regions is the wonderful way in which certain plants adapt themselves to conditions.

It is wonderful to note the peculiar forms of plants to which the prevailing conditions give rise. If nature abhors a vacuum she also abhors sterility, and hard indeed are the conditions where she cannot adapt some forms of life to their environment. The essential to plant growth and propagation is moisture, taken from the ground through the roots and sent off into the air through the leaves. In regions of abundant moisture, leaves are large and abundant also; where moisture is lacking leaves are correspondingly few and small, sometimes reduced to mere thorns. This is the characteristic of vegetable forms throughout the region traversed.

In August, 1892, the writer made a trip down the coast of Lower California as far as San Quentin, and thence southward and eastward nearly to the Gulf coast, along a line approximately parallel with latitude 30°. The entire region is a desert excepting along the few small stream courses—a waste of sandstone mesas, parched by the blazing sun of a cloudless sky. The trip was hurriedly made with the scanty equipments of a prospector's outfit. Fortunately the writer carried a folding kodak which even under the very trying circumstances did fairly good work. Some of the views obtained have been published in the Report of the U. S. National Museum for 1897, to the authorities of which we are indebted for their reproduction here.

The party left San Quentin for El Rosario, some 40 miles to the south, late on July 19, our convey-

ance consisting of a "dead ex" wagon drawn by a pair of mules. That day we made but 7 to 9 miles, nearly the entire distance being over level sand plains, either quite bare or covered with cacti, sage brush, and in places with dense growths of strong-smelling shrubs with small harsh leaves and thorny branches. We camped that night, as indeed every night, in the open air, and were on the road again by six o'clock the morning following. For nearly ten miles the route lay along a beautiful beach facing the Pacific. Thousands upon thousands of dark colored sea fowls flew back and forth in long undulating lines, while small flocks of gulls, curlews, and an occasional brace of strong flying pelicans enlivened the monotony of the trip. The sands were beautifully hard, clean, and white, with few shells or other indications of marine life. Disk-like echinoderms, an occasional giant clam, and rarely a few abalones, were the most conspicuous forms. But this part of the trip soon ended and leaving the beach we turned inland, over a nearly level plain with high mesa sands to the east. Such plants as existed were mainly cacti and small, nearly leafless, thorny shrubs. Rarely the pole-like form of a giant cactus or an agave appeared in the distance, but much more abundant were great repellant clusters of spiny, serpent-like forms 3 or 4 inches in diameter and of all lengths up to 10 or more feet. A miserable variety of sage brush, with half dead, scrawny branches, was everywhere, while an occasional small, tubular pink flower showed up in strong contrast with the dreariness of the land. The ice plant, an insignificant little thing growing close to the soil, of a green and wine red color, covered all over with jelly-like drops or tubercles, gave interest to the scene. Small lizards darted about, and an occasional quail, jack or cotton-tail rabbit, a few butterflies, a large ichneumon fly, a few grasshoppers, and a black, yellow-spotted spider which builds strong webs on the shrubs, were all that was visible in the way of animal life; though in the soil, at the foot of the shrubs, was found an occasional empty spiral shell of a land mollusk (*Helix stearnsiana*). Little in the way of reptile life was seen, although immediately about San Quentin a species of rattlesnake was said to be quite abundant. Beyond El Rosario, with the exception of quail, mountain sheep and antelope, well over to the east coast, no wild animals were observed. About dusk we reached the divide which marks the limit of the desert here, and went rattling down the steep sandy slopes toward El Rosario mission and the sluggish yellow stream of the same.

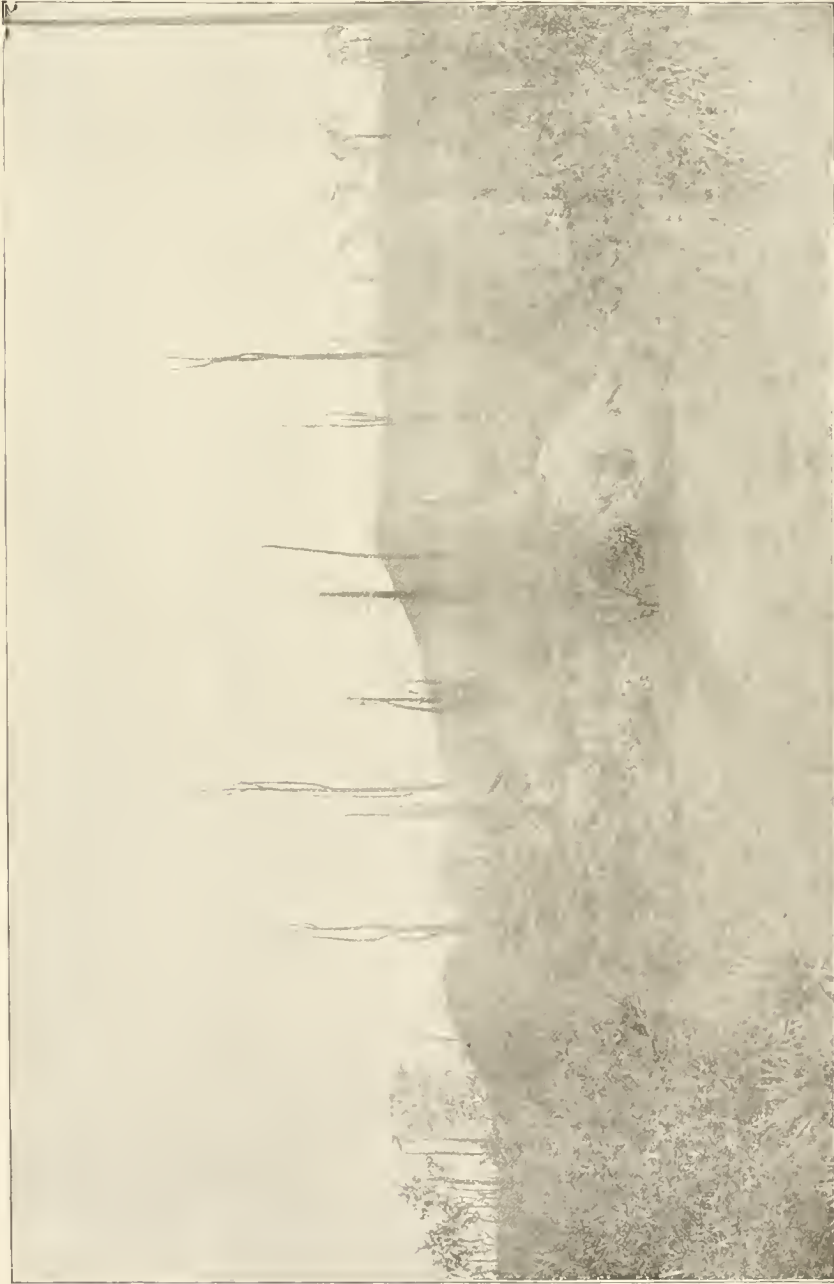
We reached the bottom just about that hour when it is too dark to see anything distinctly, to find a flat valley, perhaps a mile in width, hedged in on either side by steep bluffs of sandstone, and covered by a dense growth of greenish, pungent-smelling, almost leafless shrubs and a few willows. The short twilight came quickly to an end and left us stuck in the sand in a dense growth of bush, whence we were finally extricated by the aid of a Mexican, and about 9.30 p. m. found our way to an adobe hut, where we spent the night.

Five o'clock of July 21 found us once more astir. While the head of the party was making arrangements for pack and saddle animals, I improved the opportunity to utilize notebook and camera. El

Rosario consists of a few adobe huts scattered for a mile or more along the nearly level plains, bordering the river. From a historical standpoint its most interesting possession is the ruin of an old Franciscan mission, such as were once numerous throughout the Spanish possessions on this coast. The original buildings are now almost entirely obliterated, only portions of the massive adobe walls

remaining. A small building of modern construction now contains the altar, crude images of the saints, which grotesquely resemble large wooden dolls, and such ancient vestments as have escaped destruction. Two bells, each about 20 inches in height, are hung upon a T-shaped post made from the knees and other timber of a wrecked vessel. One of these bells bears the date of 1784 and the

PLATE III.



Characteristic Landscape, Interior of Plateau, showing Pole-like Forms of *Fouquieria columnaris* and other Desert Vegetation. See p. 23.

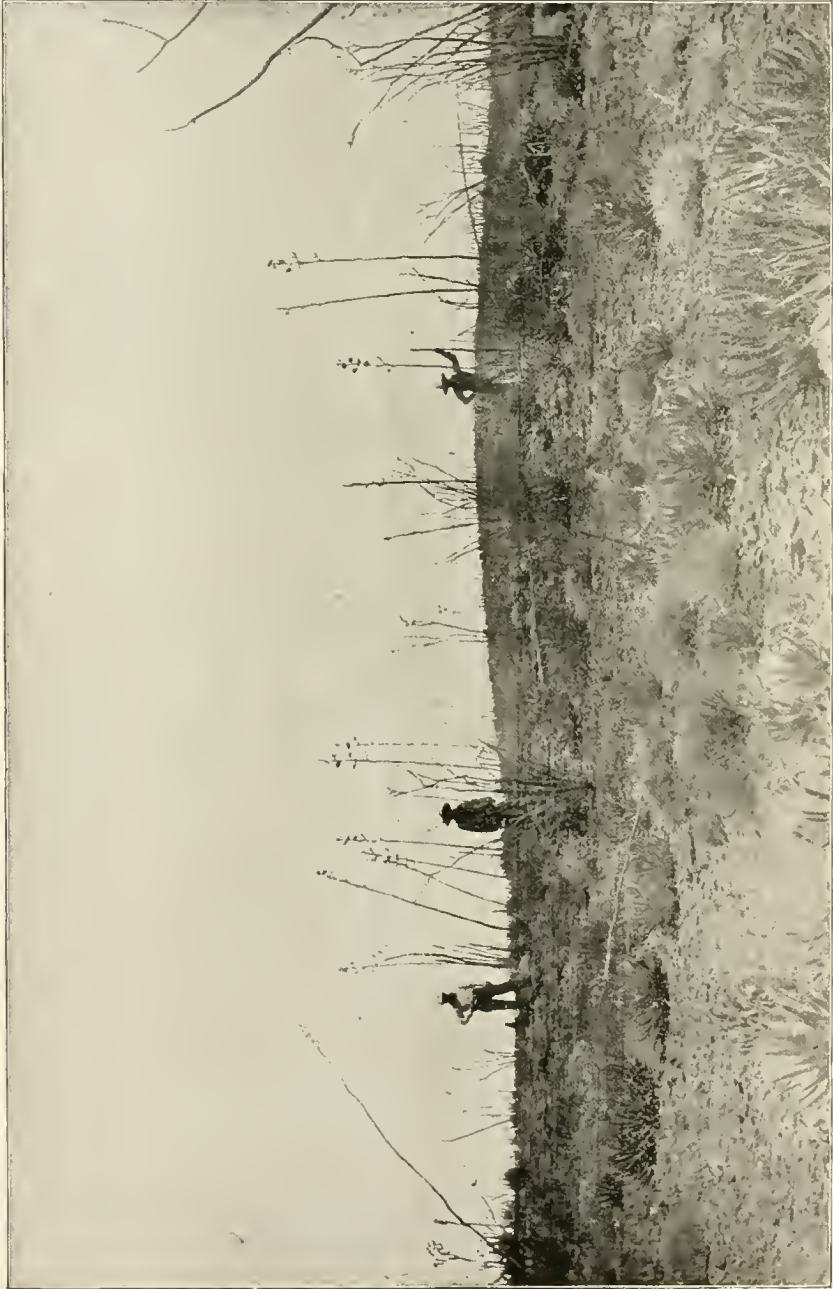
other 1800. A few miles up the river we saw in the distance ruins of an extensive series of buildings once forming a part of the mission, now given over to silence and the basking lizard.

The buildings at El Rosario are, I believe, without exception, of adobe one-story affairs with thick walls and roofs of poles thatched with straw or palm leaves and with floors of stone or hard trodden dirt. All about the houses was dirt and sand—no lawns,

walks, or roadways. In the yard, inclosed by adobe walls and thorny poles of the *fouquiera*, were stretched lines, on which were drying long strips of meat. On the flat below ran the irrigating ditches, where women were washing clothes, and which were bordered with fine large fig trees full of ripe, purple fruit, and beyond which were peach orchards and gardens.

Shortly after noon of the 21st our outfit was ready,

PLATE IV.



Characteristic Landscape on Eastern Side of Peninsula near the Tule Arroyo
The prevailing plants are *Agave shawi* and *Fouquiera splendens*. See p. 25.

consisting of three horses, two mules, and one burro for saddle purposes, and two pack mules to carry provision and camp utensils. The first 10 miles of our course lay due north up the Rosario Valley, the river bed becoming shortly little else than a dry ravine, with here and there an adobe house. At the end of perhaps 10 miles we turned to the east up a lateral canon or arroyo toward the mountain range, at the foot of which, by the side of a diminutive muddy spring, we camped. The dry stream here enters a deep, steep-walled canyon, cut in granitic diorite, which seems to form the main mass of the hills.

Next morning it was found that our animals, which had been merely hobbled in order that they might browse on the mesquite, had strayed so far that it was nearly 11 o'clock before we were once more in the saddle. Meantime the camera was brought into requisition, some of the results being here reproduced in plates I and II. The giant cactus, *Cereus pringlei* (plate I) is about 25 feet in height by 20 inches in diameter at the butt. Larger forms, 35 to 40 feet in height, occur, but this was selected for photographing on account of its accessibility, and its being in fruit, as shown in the knob-like excrescences near the top. This fruit consists of a beautiful dark carmine pulp, with black seeds, inclosed in an envelop or rind so beset with small needle-like thorns that he who plucks it needs fingers of brass. The appearance of this pulp in that dry hot region was tempting, but the realization was disappointing, it being almost tasteless, and even failing to quench the thirst. These awkward forms, resembling clustered mill-logs standing on end, were abundant, though widely scattered. Some were straight and limbless as saw logs; others gave off three or four or more clumsy branches a few feet from the ground, as shown in the illustration.

Another striking plant seen here for the first time is *Fouquieria columnaris*, shown in plate II, and which becomes more abundant on the inland plateau. Although some 40 feet in height and 15 to 18 inches in diameter at the base, these strange forms were readily cut down with the back of my geological hammer, and showed in cross section a structure not greatly unlike that of our ordinary Eastern sunflower, in that they have a thin exterior or rind of a greenish white color and an interior core of white pith-like material. The numerous branches, about the size of an ordinary lead pencil, pass directly through the hard, woody rind into the pith. When the plant dies, the limbs fall out, the pith shrinks and decays, leaving the trunks in the form of collapsed cylinders full of spiral perforations. The numerous branches project uniformly in every direction, sometimes to a distance of two feet or more. They are stiff, harsh and thorny, and it was found possible to gain access to the trunk without tearing the flesh only by turning up one's coat collar, putting on gloves, bowing the head, and backing in. Even then the work of cutting the bark is disagreeable, though the bark or rind is itself thin and tender.

A landscape of these pole-like forms is weird in the extreme, and particularly about dusk. Dry, hot, leafless, noiseless, and apparently lifeless, it conveys vividly to the imagination the idea of a burnt-out world. (See plate III.)

As we ascended the mountains and passed the crest to the plateau on the east, the country became still more forbidding; The scanty soil and scattering growth of desert plants fail to cover the rocks, which stand out bare and hot, weathered to a dull

reddish color. There was absolutely nothing that could cast a shade or boast a thornless leaf. Yet there were beautiful and interesting things, if one could but stop under that scorching sun to admire. A barrel-shaped cactus, from 6 inches to 4 feet in height, with long sharply recurved thorns, shows delicate green and pink tints, and often has a circle of beautiful deep scarlet flowers on top. The agave begins to appear; an insignificant cluster of leaves growing on vertical cliffs takes the form of a rose, and is coated with a flower-like bloom. The tints are delicate greenish white, sometimes pinkish, and when one can rid himself of the idea that the whole country is accursed, he finds it beautiful in the extreme.

We camped that night on the banks of a stream no longer running, but yielding in standing pools sufficient water for our needs, passing on the way the only habitation seen between El Rosario and San Juan de Dios. Mesquite grew abundantly along the dry bottoms, and there was a plentiful supply of quail, but no other forms of animal life were seen. From this point to San Juan de Dios the most striking features of the landscape are the rounded, boss-like forms of the hills, due to the weathering of the granular, massive diabases and diorites of which they are composed. During the day we passed over the landscape shown in plate III and crossed a low divide, where the well known "lost mountain" type of structure, became first evident. The ground was covered with angular and sharply-rounded pebbles of eruptive rocks, interspersed with thin crusts of lime carbonate, indicative of lake bed deposits. At San Juan de Dios, a little stream makes up out of the rocks in a canyon, flows a short distance, and sinks in the sand. Yet 'tis enough for human needs, and here in his adobe hut, thatched with palm leaves, lives a Mexican, raising cattle and children. We are given a hearty welcome and fed bountifully on stewed quail, beans, skim milk cheese, wild honey, and the leathery tortilla, made from corn crushed on the aboriginal metate. The landscape here, except in the creek bottoms, retains its desert aspect. The flora is composed of various species of cactus, among which the log-like *Cereus* already mentioned is conspicuous. The *Fouquieria* and agave also abound.

The following morning (July 24) a round-up was held, and some new animals secured, those obtained at El Rosario being already footsore. As the distance to the next water was estimated at thirty-five to forty miles—too far for one day, over rough trails and with unshod animals—it was decided to delay until about noon, make a dry camp at night and finish the trip next day.

The first few miles lay upward through narrow canyons with precipitous walls and loose rocky bottoms. Emerging from the canyon, or arroyo, we found ourselves on a high level plateau, which extends for miles in a northerly and westerly direction. *Agave sharrii*, with central stalk ten to fifteen feet in height, stands here by tens of thousands in full bloom, in the midst of rocks so hot and forbidding that I drive by with scarcely a look. These agaves continue abundant well over toward the east coast, and are often beautifully symmetrical. For years they gather from the stinky soil the necessary nutriment for the flower stalk, storing it up in their thick fleshy bayonet-like leaves. When the season arrives, they shoot up in a surprisingly short time a single stalk, sometimes ten feet in height and four inches in diameter at the base, bearing at the top a raceme of honey-yellow, trumpet-shaped flowers.

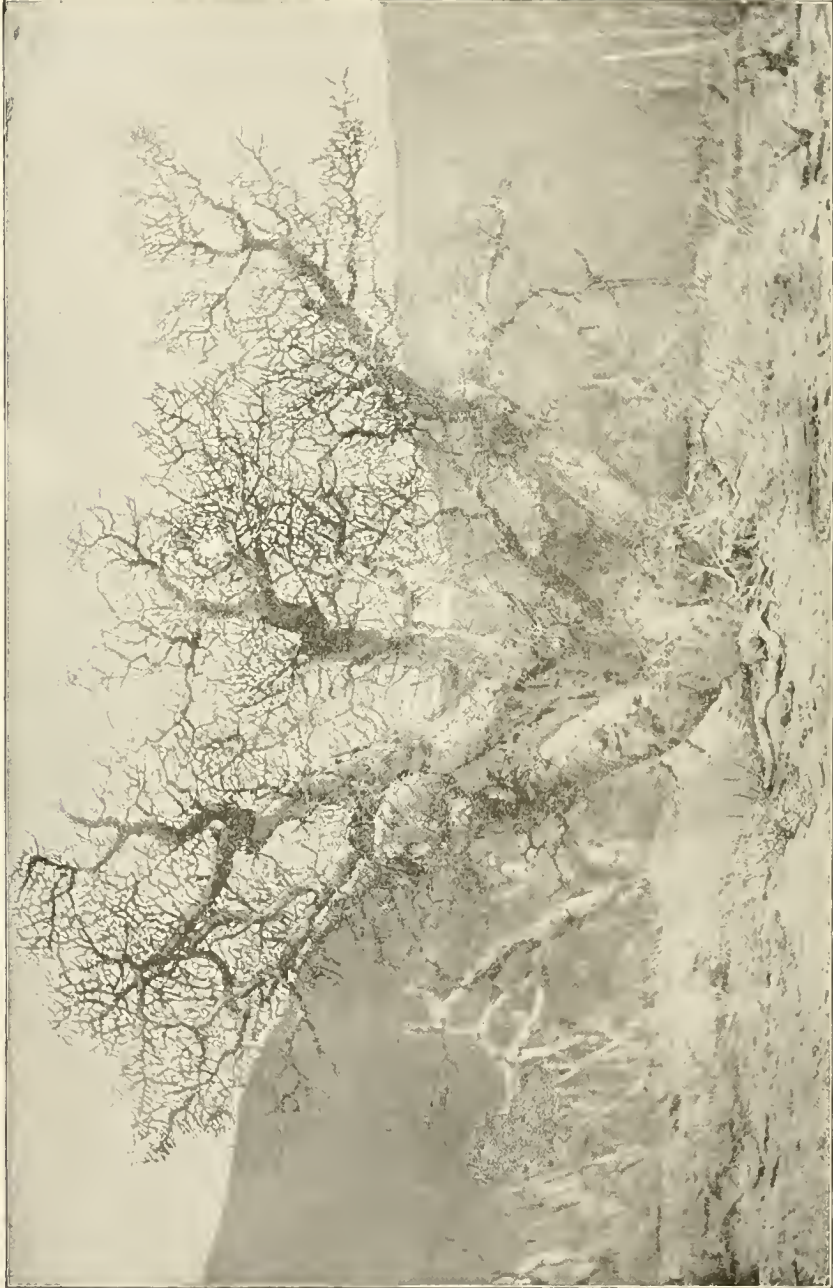
As the stalk shoots upward the leaves yield to it their stored-up juices, shrivel, and die. Thousands of these were passed during the day, in all stages of youth, maturity, and old age (plate IV).

Continuing easterly we soon reached the limit of the plateau and plunged, by means of steep and often dangerous trails, abruptly down several hundred feet where, for a distance of twenty miles or more,

we traversed an undulating plain covered with sand and loose bowlders, some rounded and others sharply angular, with lake-bed exposures wherever the now dry water courses had been cut to a sufficient depth. A few antelope seen at a distance were the only signs of animal life. We camped on the 24th in the sand of a dry water course, resuming our journey at 3.30 next morning. Sharply-serrated

PLATE V.

THE OSPREY, VOL. III, No. 2, OCT., 1898.



Elephant Wood (*Ficus discolor*). See p. 25.

mountain peaks, suggestive of volcanic cones, were seen in the distance, and about noon the plain ended in a precipitous canyon. The drainage from this point is toward the Gulf, through ravines, arroyos, and canyons innumerable.

We found water and camped on the 25th in what is locally known as Tulé Arroyo, some fifteen miles from the Gulf coast. Two little springs bubble up here in the dry bed of the stream, furnishing, when first gathered, a pleasant sparkling fluid so highly charged with carbonic acid as to resemble soda water. On standing, however, it soon lost its effervescence and became so stale as to impart a disagreeable taste even to the coffee. Our first meal consisted of stewed potatoes and dark heavy Mexican bread, as tough and indigestible as dried putty. Fortunately for us our Mexican guide went down the arroyo and returned before night with the carcasses of two mountain sheep, which kept us supplied for the rest of the trip, the air being so dry that there was no difficulty in preserving the meat. The heat of the arroyo during the day was intense. The high walls on either hand afforded shade during early morning and late afternoon, but in the middle of the day life was only tolerable to those who stayed in

camp, lying in the sand under an immense mass of rock that had fallen from the cliffs above.

Aside from the tulé and clusters of rushes, in the bottom of the arroyo, there were on the slopes above numerous cacti, one or more species of Spanish bayonet, the *Echinocactus splendens*, and numerous agaves. The most striking floral form, one which was seen only here, was *Veatchia discolor*, the elephant tree, which is really a monstrosity. These were found well over toward the east coast, growing in the scantiest soils, and of extraordinary shapes. Rarely more than ten feet in height, the main trunks were often over a foot in diameter at the ground, widely branching and tapering rapidly upward, as shown in plate V. Some of the smaller ones, a foot or so in height, enlarged abruptly into bulb-like forms some three or four inches in diameter on the immediate surface of the ground, looking like flat turnips. The leaves and blossoms are so small and inconspicuous as not to show in the photograph. The flowers are borne in immense compound panicles, and in full bloom completely cover the then leafless tree. The bark is very thick and rich in tannin.

BIRDS OF THE YUKON TRAIL.

By GEORGE G. CANTWELL, Hootalingua, N. W. T.

THE time from May 15 to June 25 was spent at Lake Bennett, B. C., in observation of bird life. Robins, Oregon Juncos, Barn and White-bellied Swallows, Jack Snipes, Ducks and Geese, seemed to be the principal birds about the lake, in company with Gambel's and Sooty Song Sparrows. On June 30, high up the range, I found many Titlarks and Leucostictes, evidently breeding, and also young Juncos, fully grown at this early date.

The trip across Lake Bennett revealed no new bird-life, except a breeding island of Ring-billed Gulls, that had been raided before we reached it. On July 6, we were in camp on Cariboo Crossing, at the upper end of Tagish Lake, and found birds more abundant. Besides those mentioned we saw Eaves and Violet-green Swallows, Alaska Jay, Audubon's Warbler, Common Redpoll, Sooty Grouse, Forster's Tern, White winged and Velvet Scoters, and Short-billed Gulls; also many Rufous Hammers in flower patches on mountain sides. July 8, at the head of the Sixty-mile river, we found Night-hawks breeding, and numbers of Yellow-shafted Flickers; no Red-shafted birds have been noticed in this country. Lake Marsh had a great variety of water fowl—Loons, Red and Black-throated Divers, Pied-billed and Red-necked Grebes, Gulls, Terns and Ducks—but no breeding spot that could be observed. July 10 found us in the swift Fifty-mile river emptying out of Marsh Lake. Here the aspect of the country changed greatly; the mountains do not continue along the river, their place being taken by sand bluffs and wide meadows. Here we found thousands of Kingfishers and Swallows at home in the banks—the Violet-green Swallows nesting in holes in the banks like the others. Here were also noticed Arctic Bluebirds with full grown young, Varied Robins, Russet-backed Thrushes, and Solitaires.

Spotted Sandpipers were by far the most conspicuous birds, being constantly in sight along the shore, and many nests were found whenever we camped. Juncos were present, but did not appear to be the same as those at Lake Bennett, having a grayer head and a decided brownish wash on the sides. No Song Sparrows were observed lower than

Tagish. Cliff Swallows were nesting on the walls of Miles Canyon and a pair of Bohemian Waxwings were observed at the White Horse rapids July 11. Below the rapids, in several places, we came upon broods of young Harlequin Ducks. Two Bald Eagles were seen at the head of Lake La Barge. Hawks were not common, and we neither saw nor heard any Owls.

On July 14, while storm-bound for three days at Lake La Barge, I had the good fortune to find a nest of the Bohemian Waxwing. It was placed in a small spruce, about twenty feet from the ground, composed of bark strips, feathers and moss, much like a Cedar-bird's, but larger. It contained no eggs, but the bird was sitting the day I was obliged to leave. I was unable to photograph the nest, my camera being with the outfit on the opposite shore of the lake. On July 21, a companion and I set out from our permanent camp on the Hootalingua to search the country between that and the Lewis River for game. We had a long, hard tramp that day, with our heavy packs, but made a good camp early in the afternoon on the banks of a beautiful lake—a spot so wild and still that I doubt if white men have often set foot on its shores—and by the way, we had both moose and bear for supper that night. It was a great resort for young ducks—we found many broods of Mallards, Green-winged Teals, Widgeons, Pintails, Golden-eyes, Butterballs and American Mergansers; also young of Solitary and Least Sandpipers, and many adult Northern Phalaropes. We also saw Hudsonian Chickadees and Richardson's Merlin.

At this date, September 1, Ducks and Geese are full grown and beginning to flock. Various Sandpipers are gathered in big bunches, and the tree-tops are full of small birds going south.

Alaska Jays are very numerous, and the most daring kind of thieves, coming right into camp and stealing eatables when ever one's back is turned. Another Grouse appears here—the Black Spruce Grouse, locally known as "fool hen." They are reported very plentiful from the Teslin Lake district.

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Vol. III.

OCTOBER, 1898.

No. 2.

Editorial Eyrie.

THE OSPREY, being a migratory bird, has flown southward from $\frac{1}{2}$ New York to Washington this autumn, and taken up its winter-quarters in a new locality, of which it proposes to become a permanent resident. The moulting process has proven somewhat severe and protracted this season, and the appearance of the bird in its new plumage has consequently been delayed. We beg indulgence for any traces of pinfeathering which may be discovered in this issue, feeling confident that the renewal of plumage will be perfected next month.

Neither the change in the editorial staff of THE OSPREY, nor the transfer of the property to another publishing company, involves any modification whatever in the plan and purpose of the magazine. Our aim will be, as heretofore, to make ornithology popular, entertaining, and instructive, leaving the technicalities of the science under the able wing of that venerable fowl, The Auk. We appeal to every lover of live birds, to every student and observer of birds' habits, to every field ornithologist and collector, to every practical oologist, to every taxidermal artist, as well as to all that large and increasing



portion of the public which is interested in the preservation of our native birds of song and beauty from wanton destruction. We feel confident of our ability to sustain this appeal by the readability of our columns and the rare excellence of their profuse illustration. Many of the best writers on birds are already contributors to our pages, and we are assured of their continued cordial support. We also have a large corps of younger contributors who are already winning laurels by preparing original articles of marked merit.

At the same time, we are not sanguine that, like the little boy in the picture, we can make two plus one equal to four. THE OSPREY's new lease of life depends upon the subscription list. Our friends have hitherto responded well, and we hope soon to double their number. In that event, we shall immediately enlarge the magazine. With twice our present number of subscribers we can print 32 instead of 16 pages monthly, without raising the price, besides being able to pay more liberally than heretofore for first-rate articles. Any one now a subscriber can easily obtain a new one for us, thereby securing for himself, as well as for his friend, twice as many pages as THE OSPREY now makes, without additional expense. New subscribers to Volume III will receive the September number *free*.

We also intend to begin, in an early number, the publication of an entirely new popular yet scientific treatise on the *Birds of North America*, in the form of a separately paged monthly supplement, profusely illustrated. This great work our subscribers will receive *gratis*, as soon as their increase in number justifies the expense of such an undertaking.

The next issues of THE OSPREY will be promptly published for November and December. They will include original, leading articles by some distinguished ornithologists, one or more new plates by Fuertes, and many other beautiful illustrations, besides a large number of notes, news items, reviews, etc.

The Sixteenth Congress of the American Ornithologists' Union, at Washington, D. C., November 14-17, was marked by a larger attendance than ever before, and higher character of the papers presented. Mr. Robert Ridgway was elected president, and Mr. Charles B. Cory replaced him as vice-president. There was no other change in officers. Mr. William Palmer was chosen to active membership, and very many new associate members were elected. The Congress was followed by a protracted session of the Committee on Nomenclature, which we understand will result in more than one hundred additions to and corrections of the names of birds in the Union's present Check-List, in gratifying evidence of progress in the science of ornithology, at the hands of its most distinguished exponents.

Letter Box.

BOB WHITE ROOSTS HIGH.

CIRCLEVILLE, O., August 15, 1898.



DEAR DR. COUES: With compliments and kind remembrance I want to tell you that through life there has been a lurking suspicion that Bob White was off the track of nature in passing his nights on the ground. His importance and make up would seemingly entitle him to protection afforded by roosting in trees. I suspected the probability that ground roosting was first a necessity in the absence of trees and in time a transmitted habit. Allusion was made to this subject in the text written for Bob White in "The Illustrations of the Nests and Eggs of Birds of Ohio," by Mrs. Virginia Jones; I having through the kindness of Dr. Howard Jones been permitted to furnish the articles on game birds published in that work. I then thought the habit could most likely be broken by a little domestic influence, but not until this year had an opportunity presented to test the matter. May 23d, 1898, I placed ten Quail's eggs under a partridge-colored bantam hen weighing eleven ounces. The hen, at this time, had been setting a week on six of her own eggs. Fourteen days after, six bantam chicks came out and were taken care of by hand, in order that the mother might continue incubation another week for the benefit of the Quail. The little mother accepted the arrangement very pleasantly and in due time was rewarded with nine young Quail. Be-

fore removing the mother from the nest the six bantam chicks were restored and permitted to spend one night in the nest with their relatives. The mother kindly accepting the whole family, she was removed to the rear of my office, a tightly fenced inclosure, and placed in a large wire cage, giving the Quail and bantams the freedom of the yard, which has a paved walk five feet wide from the rear of the office to the barn. On one side of this walk is a section ten feet square filled with wild flowers, then 10x10 feet of grass plot, and then 10x10 feet of miniature woods, of dwarf service bushes and other shrubbery making a complete "thicket." The opposite side of the walk is occupied by cultivated flowers. In this environment the youngsters flourished, the Quail feathering and maturing much faster than the bantams, and by the middle of June were full-grown birds. The 25th of June the mother bade her family good-bye and left for her old associates. The bantams appeared quite well satisfied and on the approach of evening fixed themselves on the branches of the pawpaw bushes for the night. The Quail were not so well pleased at this new arrangement, and refused to enter their old roosting place of safety in the cage. At this juncture I was called away a short time, and when I returned (not yet sundown) I found the Quail side by side with the bantams roosting on the limbs of the small trees. Since then the bantams and Quail have been roosting in the trees and are as gregarious as both are known to be. The Quail appear so well satisfied with sleeping on branches of the trees it is barely possible they will ever go back to their old and dangerous habit. Most respectfully,

N. E. JONES.

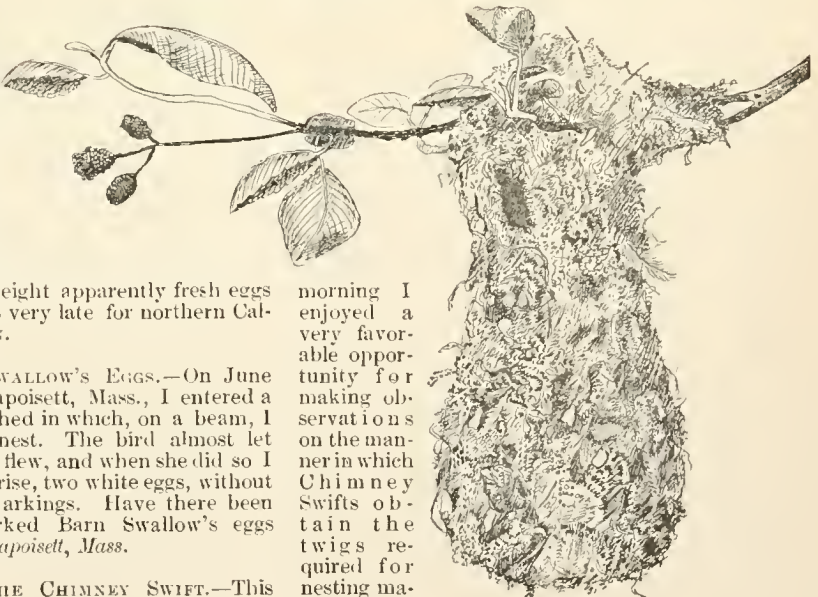
Pigeon Holes.

NEST OF CALIFORNIA BUSHTIT—The nest from which I made this drawing was symmetrical and beautiful. It was placed in an alder tree, and just below it was an old nest, probably the last year's nest of the same birds. Both nests were plainly seen from a distance, and reminded me of two little inverted balloons. This new one contained eight apparently fresh eggs on May 4, 1897, which is very late for northern California.—C. CHAMBERLIN.

IMMACULATE BARN SWALLOW'S EGGS.—On June 18 of this year, in Mattapoisett, Mass., I entered a rather dilapidated cow-shed in which, on a beam, I found a Barn Swallow's nest. The bird almost let me touch her before she flew, and when she did so I found, much to my surprise, two white eggs, without a vestige of the usual markings. Have there been cases known of unmarked Barn Swallow's eggs before?—R. TYLER, *Mattapoisett, Mass.*

OBSERVATIONS ON THE CHIMNEY SWIFT.—This

morning I enjoyed a very favorable opportunity for making observations on the manner in which Chimney Swifts obtain the twigs required for nesting material.



terial. By some it has been claimed that the birds break off small twigs with their feet, while other observers assert that the pieces are broken off with the bill, in both instances while the bird is in rapid motion. My observations confirm the latter contention.

Just back of my garden stands an old dead peach tree. It is perhaps fifteen feet high, has numerous small branches and twigs, and, as it has been dead for some years, the twigs are much decayed and easily broken off. My attention was attracted to a number of Swifts flying back and forth among the branches, and I noticed that the branches, as outlined against the blue sky beyond, vibrated violently after each passage. It apparently required several attempts before the birds were successful, when they flew away.

I now concealed myself under a low tree about ten feet from the base of the dead peach tree, and was therefore not over twenty feet from any branch of it. After waiting perhaps five minutes the birds returned and at once began circling about the tree. A Swift would retire for a distance of fifty or one hundred yards, then come toward the tree at a rather slow rate, sailing without moving the wings for the last twenty or thirty feet, and at a slight decline, until within five feet of the tree, then turn upward, which had the effect of retarding the momentum, at this instant grasping a twig in the bill and giving a number of rapid beats of the wings, which carried the bird through the branches and outside the tree. These tactics were repeated again and again, or until a twig was secured. Occasionally the Swifts flew very rapidly by the tips of branches, not slowing up in any perceptible degree, but trying to grasp at a branch as they passed unsuccessfully in their flight. They did not appear to select a particular twig and fly repeatedly at it, but simply flew back and forth among the branches, trying the one nearest at hand at the instant, and either securing it or passing on to return from the opposite side. At one time there were three Swifts flying at the tree at the same time, and, as nearly I could make out, it took from two to five or six passes before they were successful.—F. H. KNOWLTON, Laurel, Md., June 1, 1898.

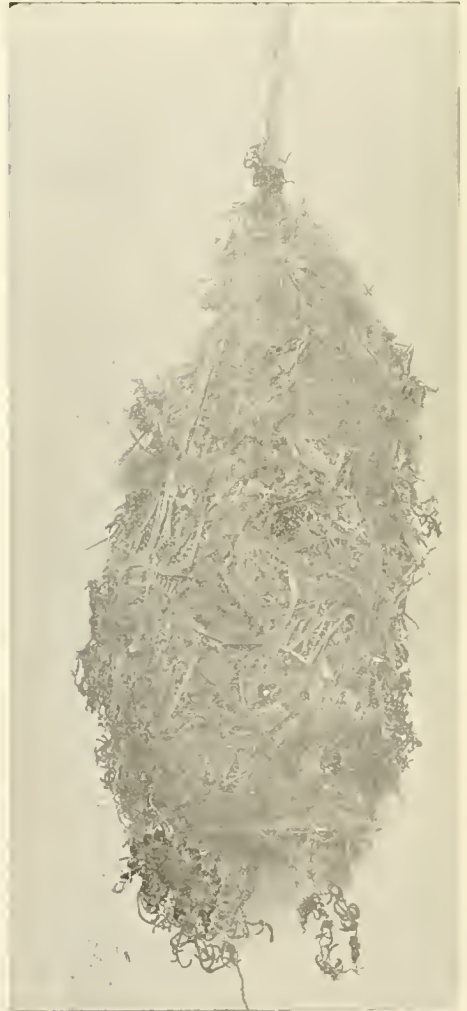
WESTERN GOSHAWK IN COLORADO.—The western form of the well-known *Astur atricapillus*, is, so far as our present knowledge goes, a rare visitor in Colorado. Prof. W. W. Cooke, in his *Birds of Colorado*, speaks of it as "rare, if not accidental," and adds: "The only certain record of the western form is that of Prof. Wm. Osburn, who writes: 'A male of this species was captured at Atkins, Latimer County, February 26, 1889, and a female at the same place March 5 (Science, xxii, 1893, 212).'" We are now able to report another capture, this time on the western slope of the Continental Divide.

In company with L. B. Gilmore, I had been spending the winter at Sweetwater Lake, Garfield County—altitude about 8,000 feet—an excellent region for ornithological work. On February 9, my brother saw two strange Hawks feeding on the carcass of a wild cat which had been thrown about fifty yards back of the cabin. We at once made an attempt to get them, but were unsuccessful. Three days later, however, Mr. J. T. Meirer secured one, which proved to be a male; a careful examination of the specimen led to the conclusion that it was a Goshawk of the variety *striatulus*. I at once wrote Prof. Cooke of the capture and later sent him the

skin, which he forwarded to the Smithsonian Institution, where it was identified as the Western Goshawk. On February 28 we saw another of the same species on the White River Plateau, at about 9,500 feet altitude; this was nearly five miles from the cabin where the pair was first observed. Again, early in March, Mr. Meirer reported another near the cabin.

Of course one can only conjecture as to the probability of these two being one and the same bird—the companion of the one taken here February 12. Perhaps time and further observation may prove the Western Goshawk to be a frequent winter visitor in Western Colorado.—L. B. GILMORE, Dolores, Col.

NEST OF MEXICAN CUT-THROAT.—In a recent paper on birds observed in Mexico, Mr. F. M. Chapman writes as follows: "*Platyparis aglaia* Lafr.—Common about the borders of woods. They were mated and nest-building as early as April 3, and



were now noisy and active, their harsh, chattering notes, as they chased one another about the tree—

tops, often reminding one of the sudden outbreak of *Myiozetetes*.

"Their nest, of which several were seen in course of construction and a completed one, without eggs, secured, is so unlike that described by Messrs. Salvin and Goldman as belonging to this species, that I cannot but believe these authors were misled by a collector's error. They write of a nest, evidently resembling that of a Vireo, open at the top and about two inches deep. Whereas that built by *Platyparis* at Jalapa, where both the bird (called 'Mosquero degollado') and its home are well known, is some fifteen inches long and about eight in width, with an entrance at one side near the middle. It is a remarkable structure, composed largely of coarse weed stalks and grasses, in part covered with fresh green mosses, the walls of the cavity being lined with mud. These nests are attached to the end of a limb of one of the taller trees, and sometimes overhang a public road." Plate III of his paper illustrates this interesting and little-known structure, whose owner is called the "cut-throat flycatcher," because of the red spot on the throat.

AUTHENTIC EGGS OF THE CURLEW SANDPIPER.—"For the discovery of this long-sought for treasure, egg collectors have to thank Mr. Hugh Leyborne Popham, whose perseverance in a second time visiting the valley of the Jenisei (the Yenesei of some writers) has met with a fitting and (according to my preconceived notions), an almost unexpected reward. . . . His pleasure may be imagined when, on the 3d of July, he watched a *Tringa subarquata* go three times to her nest on an island in the mouth of that river, and from that nest he took the four slightly incubated eggs which he has kindly entrusted me, in his absence, to exhibit tonight. The note with which he has favored me states that the nest was a rather deep hollow in the reindeer-moss on a low ridge of ground somewhat drier than the surrounding swampy tundra, in much the same sort of place that a Grey Plover would choose. To ensure the identification of the eggs Mr. Popham shot the hen bird from the nest. These eggs measure from 1.47 to 1.4 by 1.02 to 1 inch, and can be, I think, best described by saying that except in size they closely resemble those of the common Snipe, *Gallinago celestus*; but it would be quite in accordance with experience to find that others should exhibit a considerable departure from that pattern." —ALFRED NEWTON, in Proc. Zool. Soc. London for 1897, pp. 890-894, with a plate. Communicated by CHAS. W. RICHMOND, Smithsonian Institution, Washington, D. C., May 28, 1898.

EARLY NIDIFICATION OF CALIFORNIA VULTURE.—An early nesting date and a decided difference in the nesting site chosen, from that recorded in my previous notes, mark with special interest the two eggs of the California Condor which I have secured this year. Early in February a naturalist of southern California in my employ wrote:

"The Vultures ought to lay early this year on account of the dry season, which seems to sometimes induce early nesting. In April of three years ago I found two nests, each containing an egg; in the following year the nests contained young at an earlier date."

From the information concerning the taking of Mr. A. M. Shields' egg of the California Condor, and

others, I had supposed that April 20 was not a late nesting date, so my surprise was great to learn that my collector, during a ten days' trip into northern San Luis Obispo County, had taken an egg of the California Vulture on March 9, which had been incubated about 15 days. This egg had been laid about February 24, which is two days later than the earliest record which I have for eggs of the Golden Eagle.

In the late Major Bendire's Life Histories of North American Birds he was unable, from the few authentic observations at hand, to give any nesting date, although stating his belief that their mode of nidification (and by implication their nesting time) was similar to that of the common Turkey Vulture. It may be noted in this connection that the collector after securing a California Vulture's egg with incubation well advanced on March 9, took his first set of the Turkey Buzzard's in Monterey County on March 23, incubated about five days, indicating that these eggs, although an early set, were laid about a month later than the one of the Condor.

This Condor's egg was found in a cave measuring four feet long by two feet wide. It was about 150 feet from a creek and on the side of a steep mountain. Writing of the nesting site the collector says: "The egg was laid on the bare ground. The cave was sheltered on the north by a broken ledge and on the south by a large cedar tree with low branches, protecting the bird from all storms. I saw the Vulture go to the nest and then scared her off again. She sat on a rock not more than fifty yards from me while I was at the cave. I saw her about the nest for two days following."

Here we have an instance of nesting after the fashion of the Turkey Vulture, in a situation easy of access, although well chosen to avoid the inclement weather. All the other recorded eggs taken of late years were in holes or caves in cliffs, making it necessary for the collector to use the rope. Bendire's supposition that the birds favored the mode of nidification of the Turkey Vulture is thus proven to be at least in a measure correct, but I question very much they ever lay their eggs in the abandoned nests of the Golden Eagle, as suggested by Bendire.

The second egg secured for me the present season was taken on March 26, with incubation about one week advanced. Although a later set, considering incubation, than the first, this is still about a month earlier, if I mistake not, than any set hitherto recorded, showing that in early nesting this giant Vulture will often rank easily with the Eagle and other large *Raptors*.

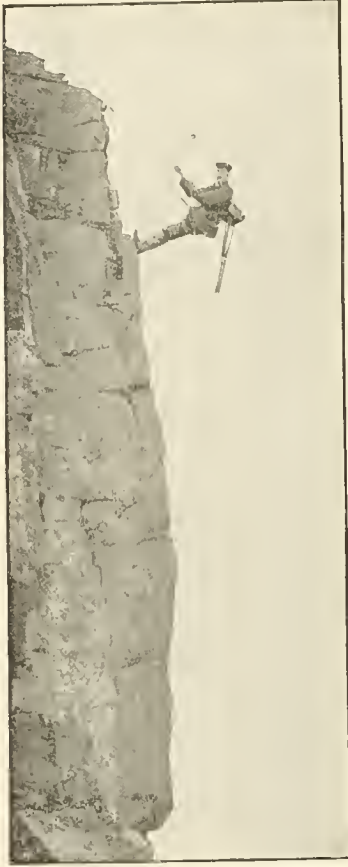
The site of the second set taken was similar to the other recorded in recent years. A "pot hole" one-third way up the the face of a slanting bluff over 400 feet high had been selected. The entrance of the hole measured about 18 by 36 inches and the interior was about four feet across. The egg was deposited on the bare sand. The hole was easy to reach with the aid of a rope, as the small cave was in a cement or conglomerate bluff of hard pebbles, furnishing a good foothold.

The two eggs I have secured are perfect specimens, typical of the species in coloration and deeply pitted shells, and show some variation in the shape of One of the specimens is retained in my collection, a rarity which will undoubtedly increase in value and interest. The other egg has been purchased by Mr. A. H. Frost of New York City.—H. R. TAYLOR, Alameda, Cal.

In the Osprey's Claws.

With Nature and a Camera.—Being the Adventures and Observations of a Field Naturalist and an Animal Photographer. By Richard Kearton, F. Z. S. Illustrated by 180 pictures from photographs by Cherry Kearton. London: Cassell & Co. Cloth, 21s.

The Messrs. Kearton have before produced a book, "British Birds' Nests," and the new one is largely a result of their experiences and observations while collecting the material for the former work. As the title indicates, they have not confined themselves to any particular range of subjects, but have chosen subjects here and there which attracted and interested them. Bits of amusing dialogue and anecdotes lend



life and color to the book, giving it a genuine literary tone. Our heart warms to the enthusiastic naturalists as we read of their tramps through the lanes and byways of the London suburbs early in morning, studying the inhabitants of hedge and bush before it is time to start to their work in the busy metropolis. We see them again, with note-book and camera, turning their backs on London and traveling the length of the "right little, tight little isle," to spend a long vacation in that ornithologist's paradise of the Hebrides, the Island of St. Kilda.

Many an ornithologist, who has run the risk of bruises, sprains and broken bones in the pursuit of his favorite avocation, will feel a thrill of sympathetic interest at the simply told tales of hazardous adventure which fill the pages of this book. As Mr. Kearton says in his preface: "It is impossible to judge of the work by the results. Much effort has no apparent result, and many of the results are out of all proportion to the labor involved." The photographs are the work especially of Mr. Cherry Kearton, and their number, variety, and beauty do him

great credit. Pictures of rural life, of wild and beautiful scenery, as well as those of birds, enhance the charm of the book very materially. In one of them the collector is seen walking backward over the edge of a high, steep cliff, supported only by a slender rope, while the waves are dashing in foam on the rocks hundreds of feet below him.—A. B.

Where to Hunt American Game.—Published by the United States Cartridge Company. Cloth, 50 cents.

The question, "Where to Hunt American Game?" is asked and answered in this neat little volume. Some years ago this company published for gratuitous distribution a large work describing game in different localities of the United States and giving names of the best guides who might be secured. So great was the demand for this book that it was deemed better to issue a new one than multiply editions of the old. Accordingly new material was collected from reliable sources, and having been compiled, the governors and game commissioners of the various States were given opportunity to examine it and verify the statements made. The arrangement of the book is very convenient; the States being arranged in alphabetical order, it takes but a moment to turn to the page containing the information desired. The book is handsomely illustrated with 133 half-tones from drawings of game found from Maine to California.

In addition to the information concerning the kind and quantity of game to be found in each State, the area and general topography of every one, and the character of its game laws, are briefly stated, so that the book is a very good sportsman's guide.

Some of the facts recorded are mournful enough and show all too plainly the unsportsmanlike work of some of our so-called sportsmen. "Decreasing," "rapidly being exterminated," and like phrases occur altogether too often; but we note, with a feeling of relief, that in many localities more stringent game laws and more rigid enforcement of them are having a good effect; and that some of our best game is increasing.—A. B.

The Birds of Indiana.—A Descriptive Catalogue of the Birds that have been Observed within the State, with an Account of their Habits. From the 22d report of the Department of Geology and Natural Resources of Indiana, 1897. W. S. Blatchley, State Geologist.

The author divides the State into three parts, according to its physiography, and in each of these, as in ancient Gaul, different manners and customs—among the birds, of course—hold sway. The Northern plain is the cross-roads where almost all the different species known in the State meet at some time during the year. Here, among sand dunes and scrub-oak forests, aquatic birds from the lakes meet the birds from the south, following up the winding branches of the Whitewater and the Maumee. Here also, for a little while in early spring, and again in late autumn, tarry the birds of passage, pausing for a brief rest before continuing their flight to distant latitudes. In like manner, Prof. Butler has credited each of the other two portions of the State, the Central plain and the Ohio slope, with its peculiar birds.

It is interesting to read how numbers of individuals and species changed as civilization advanced, and that the distribution became more general with in-

creasing settlement of the country. But Prof. Butler is forced to the sad conclusion that many feathered friends which once filled the fields and groves have disappeared. Nor does he hesitate to place the blame where it belongs. His arraignment of fashion and its heartless demands should have the hearty support of every lover of birds.

The nomenclature used by Prof. Butler, like his classification, is that adopted by the American Ornithologists' Union. His descriptions are concise and complete, giving entire satisfaction. His bibliography of Indiana ornithology is of great value to those desiring to continue the study of the avian fauna of this State.—A. B.

Birds of the United States East of the Rocky Mountains.—A Manual for the Identification of Species in Hand or in Bush. By Austin C. Apgar. New York: American Book Co., 1898. Cloth, \$2.00.

This work is designed as a text-book or manual for beginners, and is admirably adapted to the purpose for which it is intended. Mr. Apgar is a professor in the State Normal School of New Jersey, and is thoroughly alive to the needs and difficulties of young students. He has not attempted to make their work more easy by ignoring or evading the difficulties, but has cut a clean swath through them by explaining all technical words and phrases and then using them repeatedly in their proper connection. His book is an example of simplicity and conciseness throughout; the painstaking, conscientious teacher having himself a good knowledge of the subject, and being desirous of imparting it to others. He appears to have studied the "Key to North American Birds" to great advantage, and his treatment of the subject reminds us of the Couesian methods. The drawings are careful and generally correct from a technical point of view, though not artistic. Each has a scale of its own, so that the size of every bird figured may be easily ascertained. The pictures have the beauty of utility, if no other.

The book is divided into four sections. Part I treats of the "External Parts and the Terms Needed for their Description." This is intended for use when the specimen can be taken in the hand and observed closely, and is concerned most with those characteristics which change least with age, sex, or season. This part is brief, but clear and easy of comprehension.

Part II contains the "Key, Classification, and Description of the Species," and is much more elaborate, though no less easy, than Part I. Here are keys to the families, genera, and species, with appropriate instructions as to their use. The Check List of North American Birds in use by the American Ornithologists' Union is followed for nomenclature and classification, but here the order of the families is reversed, the higher coming first instead of last. The pronunciation of scientific names is marked.

Part III covers ground of the greatest interest to the average amateur ornithologist, "The Study of Birds in the Field." A key is given for the purpose identifying birds as seen in the fields and groves, emphasis being placed on those features which may be distinguished with the naked eye or by the aid of a field-glass. Valuable hints are given as to methods of study, locality, season, time of day, etc.

Part IV is a treatise on the "Preparation of Bird Specimens for Display or Study," and contains much information as to the best methods of skinning, stuffing, and mounting specimens.

A well arranged glossary and index closes the volume, making it a very complete manual. The author's purpose may be best expressed in his own words: "This book is written chiefly to help you to recognize birds and not to tell you all about them. But if you are interested in the study, it will be a great pleasure to you to learn all you can about the birds that frequent your locality. Through book study alone no complete knowledge can be gained of birds, or indeed, of any animals."—A. B.

Familiar Life in Forest and Field.—By F. Schuyler Mathews. New York: D. Appleton & Co., 1898. Cloth, \$1.75.

The life that is so familiar to Mr. Mathews is known to many, but few have seen it so closely or known it so intimately as he. It is surprising, when one considers it, how many animals are to be seen within a short space of time in field and forest, when we have learned how to look for them.

This work comprises a wide range of species observed within a comparatively small area. It is more than anything else a defense of the animals at which we are wont to look askance. In his estimation, the only incorrigible and utterly vicious animal in existence is the wild cat. Of the others he says: "One of these days, when the cutworm, the grasshopper, the field mouse, the army worm, and the gypsy moth devour the farm, house and all, we will wonder what has become of the beneficent skunk, weasel, and snake. Perhaps we have yet time enough to give these poor creatures a chance to learn we are friends and not enemies."

The book is charmingly illustrated with drawings or photographs of the different animals accompanied with sketches of the scenes among which they are commonly found.—W. A. J.

The Art of Taxidermy.—By John Rowley. Illustrated with 20 plates and 59 figures. New York: D. Appleton & Co., 1898. Cloth, \$2.00.

This is an excellent and almost indispensable compendium for the use of professional taxidermists, and also possesses considerable interest for the amateur. Mr. Rowley takes up the work at its first steps, the collecting of specimens, and follows it through all the successive stages until we see the objects of natural history beautifully mounted and grouped. The first chapter is a graphic description of a trip into the woods in search of specimens, of which many kinds, from a bear to a mouse, are captured.

The taxidermist's tools and materials are next described and the best kinds for the various purposes indicated. Chemical formulae which the successful taxidermist should know and use are given. The outfit recommended is simple and inexpensive, and can, as Mr. Rowley's own experience shows, be carried long distances and used even under very disadvantageous conditions.

The process of making casts and models is fully explained, as is also the reproduction of foliage and other accessories for groups. Thus the book is comprehensive and up to date. No bird is too small to be overlooked in describing the different modes of treatment, and no mammal is so large that every detail is not carefully and accurately treated.

The numerous and effective illustrations are mostly from photographs taken by the author; others are drawings by Mr. Ernest W. Smith, his assistant in the American Museum of Natural History.—W. A. J.

Birds of Washington and Vicinity, including Adjacent Parts of Maryland and Virginia.—By Mrs. L. W. Maynard. With Introduction by Florence A. Merriam. Washington, D. C., 1898. 8vo, p. 204.

"This little book," says the author in her preface, "has been prepared at the suggestion of the Audubon Society of the District of Columbia, in the belief that a local work giving untechnical description of all birds likely to be seen in this vicinity, with something of the haunts and habits of those that nest here, will be useful to many who desire an acquaintance with our own birds, but do not know how to make it."

The intention thus announced has been well carried out. After Miss Merriam's Introduction, we have a few words "about birds in general," intended for the tyro, and then a field key to our common land birds, taken from Chapman's Bird-life. Knowing as much as we do about keys in general, and the difficulty of constructing keys that will open the lock, even when made from specimens in hand, we have our doubts of the utility of keys for birds at gunshot or opera glass range. But they are fashionable now-a-days, and one might as well be out of the bird-world as out of key-fashion. Let that pass, however, as a stage whisper aside. Following the key is the main body of the book, running pp. 41-155, treating systematically of the summer residents of the District, known or believed to breed here, with a brief formal description of each, and more or less extended field notes. An article on migration comes next, with a briefly descriptive list of the migrants and winter residents.

But the most important article is the "List of all Birds found in the District of Columbia," by Dr. Charles W. Richmond, of the Smithsonian Institution. This enumerates 291 species in tabular form, dividing them into the six categories of permanent residents, summer residents, spring and autumn migrants, winter residents, casual visitors, and accidental stragglers—though the distinction between these two last categories is not obvious to the present writer. The construction of the table shows at a glance to which category or categories each species belongs, and all are briefly annotated.

We call special attention to this list, as it marks a great advance in our knowledge of the subject. The first such list, during the present generation of ornithologists, was that by that by Drs. Coues and Prentiss, published 36 years ago, in the Annual Smithsonian Report for 1861, pp. 399-421. This article gave 226 species. The next list was a nominal one by Pierre Louis Jouy, "with remarks on the birds of the District of Columbia" by Drs. Coues and Prentiss, published in *Field and Forest*, May, 1877, pp. 191-193. This subtracted one and added 15 species, raising the number to 240. In 1883 the original authors published a new and entirely rewritten edition of their work, entitled *Avifauna Columbia*, etc., as Bulletin No. 26 of the U. S. National Museum, 8vo, pp. 133, frontisp., map, and many figures of birds from Coues' Key. In this work the total number was raised to 248, divided into 47 permanent residents, 46 winter residents, 66 summer visitants, mostly breeders, 49 spring and autumn migrants, and 40 accidental or very rare visitants. It is thus seen that during the period from 1862 to 1883, there were but 23 accessions to the original list. In the present case the showing of 43 accessions since 1883 indicates the admirable activity of our local ornithologists. The increase in number is of course chiefly in the categories of the very rare or casual visitants, but Dr. Richmond is

now able to make some notable modifications of the former categories, by transference of some species from one to another category, in consequence of the increased precision of our present knowledge concerning their proper status.

Following Dr. Richmond's article is a nominal list of the birds that may be seen in winter in the District; to which succeed several very local lists, each of a few species that have been noticed in some particular place within the author's general limits, in Brookland, Mt. Vernon and Kensington, and in the Zoological Park. Miss Merriam's Observation Outline follows, abridged from her *Birds of Village and Field*, with a short list of useful books for new students. The book is indexed, and on the whole will be found indispensable to our local ornithologists.

The book bears no publisher's imprint, and we do not know where it may be procured, nor its price. The copyright is held by the author. It is well printed at the Lord Baltimore Press, by the Friedewald Company of Baltimore.

We should not end this notice without a word regarding the illustrations. These are reproduced from Bulletins No. 3 and No. 54 of the U. S. Biological Survey, Department of Agriculture. All are recognizable portraits of birds, but when we say that they are efforts of the United States Government to be artistic, we have no higher praise to bestow upon them.—E. C.

Wild Animals I have Known and 200 Drawings.—By Ernest Seton Thompson. New York: Scribners. 8vo, pp. 359.

In noticing this remarkable book, we could wish it were more ornithological, or that *THE OSPREY* were less exclusively devoted to birds. But one of the nine strangely interesting stories it contains is that of "Redruff, the Don Valley Partridge," which shows singularly sympathetic insight into the life of the Ruffed Grouse, and has only to be read to be warmly felt. In its way it is a model biography, and we have no doubt that the truly understood life history of many another bird would furnish the materials for similar artistic treatment. We seem to get at the very heart of the mother bird and her little ones. The same spirit runs through all the other stories—they are threnodies, all tending to the inevitable catastrophe of death by violence for wild animals, yet not without plenty of fun and mischief while life lasts. Mr. Thompson has observed, or at any rate revealed with rare fidelity of art to nature, a great secret. This is, that the life of a wild animal *always* has a tragic end; and this is the sad reason why these true stories are tragic. Furthermore, the book shows clearly how near akin are the beasts of the field to lordly man: how man has nothing that may not be traced in other animals; how beasts have nothing that man does not share in some degree, and thus that they surely have rights of their own. This is a lesson that cannot be too often inculcated, and has, perhaps, never been before so strongly pressed home to us. The book is a wholesome one, in spite of its sorrowful burden; it should teach every one of us to be kindly and merciful to our fellow creatures of lowly degree. It is also exquisitely illustrated, both with full page plates and with numberless telling thumb-nail sketches on the broad margins of the pages. Mr. Thompson is now easily first as an artist in mammals, among those of this country at any rate, and a close second to Mr. Fuertes in birds. Either of these admirable artists would be the making of any book in which their pencils should have free scope.—E. C.



NESTING PLACE OF THE IVORY-BILL.



MR. RIDGWAY GOES FOR IVORY-BILLS.



"A BIRD IN THE HAND IS WORTH TWO IN THE BUSH."

THE OSPREY.

AN ILLUSTRATED MAGAZINE OF POPULAR ORNITHOLOGY.

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THE HOME OF THE IVORY-BILL.

By ROBERT RIDGWAY, Washington, D. C.



were found who thought they knew the bird, and in following up the clues which they furnished, their bird in every case turned out to be the Pileated Woodpecker, an abundant species throughout the wooded portions of the peninsula.

Having subsequently received reliable information that the Ivory-bill was to be found in the Big Cypress district southeast of Fort Myers, I visited that region last winter and spent two months there, chiefly in or near the large bodies of cypress from forty to sixty miles southeast of Fort Myers, but including a trip up the Caloosahatchie River to Fort place, at the southern end of Lake Flirt, immediately opposite the junction of the latter with Okolocochee Solugh.

During the two months spent in search for this bird only four were heard, three seen, and two secured, notwithstanding the fact that it was constantly the special object in view, days, altogether, being spent in floundering through the most difficult and often wholly impassable cypress swamps, and hours at a time passed in sitting quietly among the cypress with eyes and ears alert. We started into the wilderness January 16th, but up to February 15th neither sight nor sound of an Ivory-bill rewarded our vigilance, and I had almost come to regard the bird as a myth. Late in the evening of February 15th, however, the reward of patience and perseverance came;

and, as so often happens, it came toward the end of trials and hardships which could not adequately be described.

It was just before the moment when, in that southern latitude, daylight is suddenly blotted out and darkness settles over the earth, that I was making my way fast as possible out of the last of several cypress "strands," which, with intervening saw-grass marshes and bodies of all but impenetrable tropical jungle, for several hours had sorely tested my strength and endurance in my effort to reach camp. I had foolishly attempted to return by a "short cut," and finally realized that it would be impossible to reach camp that day, for travel in that wilderness at night is a physical impossibility. Just as I was walking out of the last cypress and hurrying to reach a suitable camping place, I heard a strange note. It was in no way remarkable except that it was quite new to me, and I was too tired and worried over the situation to pay much attention to it. In a moment, however, the author of the notes flew from a clump of "cabbage" (palmetto) trees into the swamp at my right, and was at once recognized as the long-sought Ivory-billed Woodpecker. Realizing the futility of then attempting to get the bird as well as the urgent necessity of preparing for my lonely bivouac, all possible haste was made to reach a beautiful palmetto hammock some five hundred yards ahead, in order to employ the few remaining minutes of daylight in gathering firewood and selecting a suitable camping place. Besides, I had lost interest in Ivory-billed Woodpeckers, and thought the one seen to be the most funereal looking, and its note the most doleful, of any bird seen or heard in all my experience. No doubt the circumstances had much to do with these disagreeable, and most disappointing impressions of a bird the first sight of which I had for many years looked forward to with the keenest and most enthusiastic anticipations.

Starting at the earliest sign of daylight, I

was fortunately able to reach camp before my companions had started in search of me, although they had eaten breakfast and were ready to depart. Feeling, myself, the urgent need of something to eat (a single pancake and cup of coffee being all that I had partaken during the past thirty-six hours), the events of the previous night and preceding afternoon were excitedly discussed while this matter was being attended to; my companions told how they had fired guns all night long and set fire to palmetto trees, while I told them of my experiences. A strong wind from the wrong direction and the intervening woods had prevented me from hearing or seeing their signals. The good news of the discovery of the Ivory-bill was an offset to the rest, and when my hunger had been satisfied we all started for the place where I had seen the bird the previous evening. Arriving there, a pair were discovered and the male shot by my companion, Mr. E. D. Lucas, the female escaping. No more were seen that day, but returning the following day, another pair, with their nest, were found in the same locality. I shot the male as he flew from the nest, but the female kept out of sight in the thick, leafy growth farther back in the swamp, her presence being made known by her occasional call notes. After securing the male I hid myself in a group of large cypress knees in full view of the hole and within range of it, and for several hours patiently awaited the arrival of the female; but she was too sagacious to appear. I picked up a stick and rapped loudly upon a cypress knee; but Mrs. Ivory-bill was not to be deceived in that way. A male Pileated Woodpecker responded instantly, however, and alighting upon a dead stump within ten feet of my hiding place, amused me by his funny efforts to discover the other woodpecker whenever I would slyly reach behind and tap the knee with my stick. He presently "caught on" to the trick, however, and decamped.

Becoming finally tired of waiting for her to come, I concluded to try to stalk the female Ivory-bill, who could be located by her occasional calling from the thick growth. She led me a will-o-the-wisp chase through the jungle, and I was reluctantly forced to give up the pursuit. On this, as on other occasions, every large woodpecker heard tapping was cautiously stalked, but in every instance the bird proved to be the common Pileated species.

During our perambulations in this locality the nest of the other pair was found, the two being not more than two hundred yards apart, but the female (the male having been killed the day before) was neither seen nor heard, and probably had left the vicinity.

As the result of my three trips to southern Florida, I feel sure that the Ivory-billed Woodpecker is not only a rare, but very local bird in that part of the State, and that it only occurs in large cypress swamps or their immediate vicinity, its true home being within the cypress, and its feeding grounds the cabbage palmetto and live-oak hammocks just outside. Although a far more powerful bird, the Ivory-bill looks no larger at a distance than the Pileated Woodpecker, but its color, its actions (particularly its manner of flight), and its notes are so totally different that once seen it need never be mistaken for that species, or vice versa. The Pileated Woodpecker is a noisy, active bird, always in evidence from its loud yelping or cackling notes or its restless movements. The Ivory-bill, on the other hand, is comparatively quiet and secluded, and its notes would not attract attention except from one keenly alert for new sounds, being notable for their nasal tone and perfect monotony rather than any other quality. In fact, so far as my own experience indicates, the notes of the Ivory-bill are not as loud as those of the Red-bellied Woodpecker, as I was convinced by hearing them both at the same time. They resemble nothing else so much as the toot of a child's penny trumpet, as described by Wilson, or a false high note on a clarinet, as Audubon describes it, repeated three or more times (like *pait, pait, pait*), with absolute monotony; but instead of being audible at a distance of half a mile, as Audubon states, I am sure that those heard by me would have been inaudible beyond half that distance.

The flight of the Ivory-bill is very accurately described by Audubon, and is very different indeed from that of the Pileated Woodpecker. The former may be compared with the flight of the Hairy Woodpecker, but is even more bold and sweeping; the latter, to my eye, is more like the flight of the Belted Kingfisher.

The two nests discovered were precisely alike in essential particulars as to situation. Both were near the upper extremity of tall, straight, live cypress trunks, both on the south side, and in neither case did the trunk lean from the perpendicular, nor was the hole placed beneath the protection of a large branch. That shown in the accompanying illustration (see frontispiece) was about 65 or 70 feet up (the lower part of the same tree is shown in the middle of the other view, page—) while the other was about 80 feet from the base of the tree. Having no ropes or other appliances for climbing, it is needless to say no attempt was made to reach either nest.



THE ENCHANTED ISLES.

By Rev. HERBERT K. JOB, North Middleboro, Mass.



THE purpose of this article is to describe the bird colonies on a group of islands in the Devil's Lake region that I visited during a collecting trip in North Dakota in the spring of 1898. The islands are four in number, small as to area, barren as to flora, stony and grassy as to topography, and as to fauna—I have named them as I have.

My first visit was on May 23, a day in a thousand, clear and calm, ideal for photography. What I shall call Island No. 1, because the first visited, is the smallest of the group, perhaps 100 yards long, and quite narrow. The first sign of bird life as we approached was a group of erect black objects, resembling in the distance a company of soldiers drawn up in line, which proved to be a colony of Double-crested Cormorants on their nests. Soon we could discern a mantle of white on the rest of the island, and over it, too—another colony, of Ring-billed Gulls. Even before the clamor of the Gulls became audible, the honking of Canada Geese rang out over the placid lake from the island, exciting pleasant anticipations. A quarter of a mile away we were when the shy Cormorants began to leave their nests in detachments, flying around anxiously, but at a distance. When close up the gulls all rose, and the scene was indeed enlivening. After taking a snapshot at the island and Gulls, we landed, and our party of four proceeded to explore.

Here was the Cormorant rookery close at hand, with just 30 sets of eggs—2 of 5, 23 of 4, 3 of 3, and 2 of 2, besides a few empty nests. With most of the eggs incubation had begun, though, for all that, some of the sets may not have been complete. The nests were about two rods from the shore, on clear rising ground, arranged in an irregular curve, two or three deep. Each nest was about a foot in height, placed as close as possible to the next one, and made entirely of sticks, with a lining of grass or weeds. So compactly are the sticks intertwined that the structure is a veritable unity. I found one on the shore of the mainland, where it had apparently drifted in a storm, with every stick still in place. The picture shows only a part of the rookery.

Just as we reached this interesting spot, a female Gadwall flushed a few yards ahead of

us, and under a thick growth of tall, dry weed stems was her downy nest, with 10 fresh eggs. A few steps away, just at the top of the beach and close to the boat, another Gadwall went out from the grass at our feet almost like a shot, leaving four eggs in a very small nest that barely held them. I supposed it was an incomplete set, but they proved to be heavily incubated. Apparently the nest was made to fit the eggs, not finished before the eggs were laid.

We now had to be careful where we trod, for eggs of Ring-billed Gulls lay all about us. Our rough estimate was that there were from 200 to 300 nests on the island. Three was the almost invariable number of eggs in the sets, only three or four sets of four being found—one of which latter I photographed. Nearly all the eggs were advanced a week or ten days in incubation. The nests were not bulky, yet substantial enough to give the eggs a soft bed, and were built of weed-stems, drift-weed, and grass, lined with feathers.

A few of the Gulls seemed larger than the rest, and my attention was called to the fact that some of the eggs were large. We found that the only sets of large eggs, seven in number, were in one group, in a row along the upper part of the beach, adjacent to the Gadwall's set of four. It was a colony within a colony—of the American Herring Gull.

Now came the best find of all. Entering a patch of sparsely-placed, tall, dry, woody-stemmed weeds, there lay a wide, flat nest of weed stems and grass, surmounted by a pile of white down, through which something else white peeped. Opening the nest to view, it was a memorable experience to gaze upon the six great chalky eggs of the Canada Goose—my



NESTS OF DOUBLE-CRESTED COMORANT.

first set. They were clean and almost fresh. Strangely enough, the nest was so built as to include the rounded end of a rock projecting from the ground, which received its share of

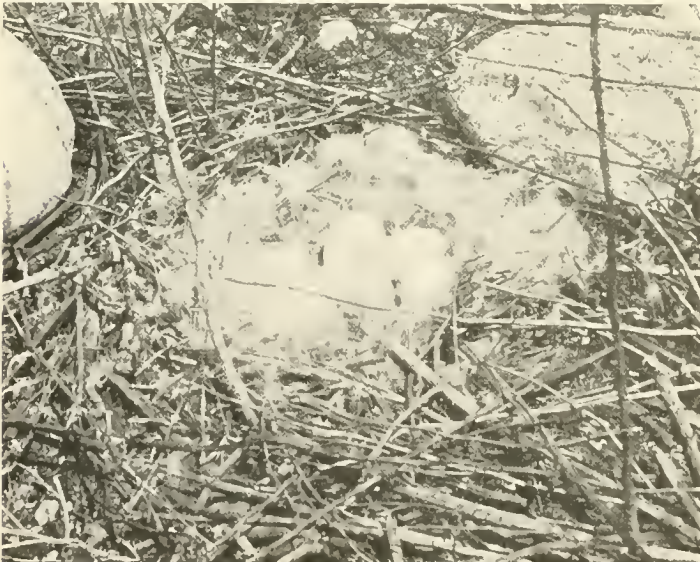
incubation as a seventh egg—admitted, perchance, to make a "perfect" set! Surely, even with all the population of the island, house-lots were not so high or scarce that the greatest bird of them all must content itself with a poor location! The picture shows this "rock cottage."

The eggs on this island were now getting hot in the glaring sun, so we left for Island No. 2. This island is the largest of the group, comprising, I should judge, two or three acres, the third and fourth islands being of an acre or two. As we landed, several Golden Plovers flew from the shore. Two detached themselves from the others and made back straight for the boat. A shot from my gun tumbled them both into the water. As we were all searching for duck's nests, one of the party came upon another nest of the Canada Goose containing five eggs, in this case considerably incubated. No attempt at concealment had been made. It was placed in the ordinary short grass, a few feet from the edge of the bank that ascended from the stony beach. It was not much more than a grass-lined hollow, with quite a profusion of down added. It was not nearly as much of a structure as the other. Near by, mostly at the top of the

Approaching Island No. 3, we first met the Golden Plover and a pair of Red-breasted Snipe on the nearest point of the island, the former watching us from some isolated rocks in the water. It was a delight to me to meet for the first time these and other waders in their beautiful spring garb. The island was given over in the main to a large colony of Common Terns. The birds were there in force,



NEST OF RING-BILLED GULL.



NEST OF CANADA GOOSE.

beach, was another, but smaller, colony of Ring-billed Gulls—about 55 pairs.

but had not begun to lay. The only set of eggs found was another of Gadwall's, six in number, fresh—probably an incomplete set—situated in a rather sparse clump of weeds.

The day was now far spent, but we made a hasty visit to Island No. 4. A pair of Canada Geese stood watching us on a gravel spit at the further end, with outstretched necks, flying off with loud honking as we approached. Near the point, in a clump of weeds, we found a nest that looked as though it had been robbed some days before and been rained on. Another nest, which we judged to be that of last year, was found further up on the island. A couple of male White-winged Scoters flew along shore, quite near us, and we made a careful search for their nests, but in vain, finding only a set of ten Mallard's, heavily incubated, in a clump of weeds at the top of the beach. The female flushed as we walked along the shore, spattering her eggs with excrement as she started, as usual with ducks surprised on their nests.

The remaining daylight was utilized in taking a set of three Ferruginous Rough-legged Hawk's eggs, examining a few nests of Swainson's Hawk, with incomplete sets, digging out the hole of a Burrowing Owl, and getting back to camp with the boat, which we had to cart eight miles, reaching our destination at 9 p. m. We were greatly pleased with the locality, and I thought we had done well to find even four ducks' nests—but wait!

Monday, June 27, found us back on the old camping-ground. Rain had fallen for a week almost incessantly, but now we were favored with a clear, still day, of which we took advantage for another visit to the islands. Launching from the shore nearest to them, a Piping Plover protested against the intrusion, fearing we should step on her young, which I saw crouching among stones on the beach. Our party was of three this time, and one, not an ornithologist, remained with the horses to kill flies.

Island No. 3 was the first we visited this time. A cloud of Common Terns and some Ring-tailed Gulls hovered over it. Hardly had we stepped from the boat when up went a Gadwall from the weeds, leaving her six incubated eggs for us to admire. Half a dozen steps more and away fluttered a female Baldpate from her eight fresh creamy-white eggs; then another of the same species a few feet further on from a set of ten. Each nest was placed under a clump of weeds among the loose rocks. Then, as I retraced my steps toward the boat, a Lesser Scaup flew from the grass three rods ahead of me. After a little search, I found her set of nine chocolate-brown beauties.

Meanwhile my companion was poking over a clump of rose bushes near by, on the summit of the island, and, seeing some rubbish with a little down clinging to it, pulled it apart and unearthed seven great dirty flesh-colored eggs of the White-winged Scoter. The nest was little more than a hollow in the damp earth, with a rim of straws, stems and sticks, lined with a small amount of dark gray or blackish down. The eggs were fresh and cold, the set incomplete. The bird had scraped loam over the nest, with other debris, and it seemed like digging potatoes to get the nest into shape to photograph. This set me hunting for more Scoters' nests, and it was but a moment or so before I dug from under a small clump of brush close by a similar nest with one buried egg, the bird having just begun to lay.

Now Scaups and Baldpates started from their nests every few steps. To ascertain if the

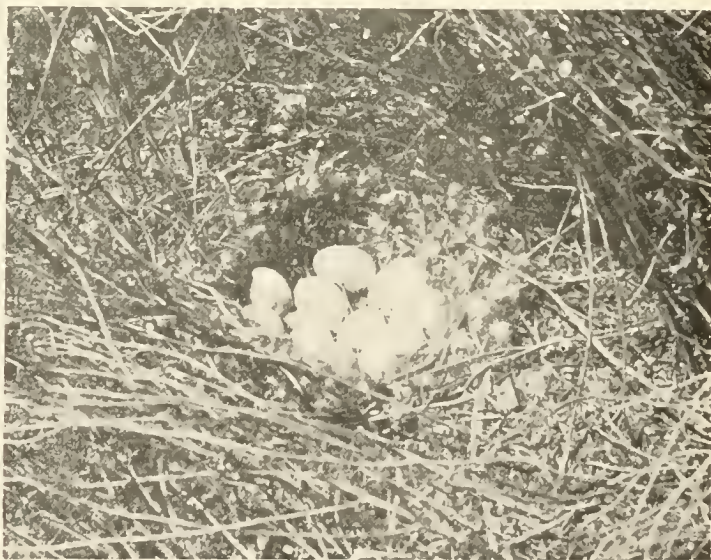
Greater Scaup was not there, I shot three Scaups, much as I disliked to do it, measurement of which proved them all to be the Lesser (*Fuligula affinis*).

So incessant and startling was the fluttering up of ducks from beneath our feet that we both got "rattled" and forgot where some of them were when we thought to take a second look. I got so far behind with my notes that I had to give up taking an exact account of all the finds. On this island were at least six sets each of Scaup's and Baldpate's eggs, one of Gadwell's, and two, incomplete, of Scoter's.

But this was by no means all, for the island was strewn all over with sets of the Common Tern's eggs, in twos and threes, in all stages of incubation. Quite a number had hatched, and the young were skulking everywhere amid the grass and weeds. A few sets of Ring-billed Gull's were also found—probably second sets of pairs robbed on the other islands.

Next we rowed to Island No. 2, the largest of the group. The whole Ring-billed Gull colony seemed to be here. Whole rafts of young gulls ran down from among the rocks and swam out as we approached. It was the same as on the other island with the ducks. We walked through the patches and clumps of grass and weeds along half of the south shore of the island, and found more Baldpate's and Scaup's eggs than we could have carried, had we desired to take them all. Selecting a few choice sets, my companion volunteered to carry them to the boat, while I kept on.

It got to be an old story—Baldpate, 10; Scaup, 11; Scaup, 8; Baldpate, 9. These were the



NEST OF GADWALL.

numbers usual in the sets of these two species: six was the minimum and twelve the maximum. The nests of both were similar to those of most ducks that nest on high ground—a little hollow, in a tussock of grass or weeds, with a somewhat scanty bed of soft grass, rounded

up on the sides, lined with a profusion of down and some feathers. The females do not usually pluck the abdomen bare, but, though some feathers are removed, for the most part weed out the down around the base of the feathers, leaving the latter intact. Doubtless some feathers are removed unintentionally.

The eggs of the Baldpate are white—sometimes decidedly creamy, then again clear white, almost like porcelain. The Scaup's eggs are always dark, varying from dull olive-brown to almost chocolate-brown. Some are almost the color of the eggs of the common American Bittern. The Baldpate's eggs were all fresh, or nearly so, some of the sets being incomplete while most of those of the Scaup were incubated. Indications were that, as a whole, the Scaups averaged some ten days earlier than the Baldpates in laying.

The monotony of the Scaup and Baldpate program was now varied by flushing a female Shoveler of a curious set of ten eggs of her own and four of a Scaup. All were fresh. Within a few paces was the nest of a Scaup with six fresh eggs. Perhaps the Scaup forgot her door number, or else was disinclined to a large family—like some other individuals of the present age. One of the sets of Baldpate found had some very small eggs, and I was inclined to think that the Shoveler, too, was not above the practice of shirking maternal duties.

Now my companion returned and conducted me to a welcome sight. Passing two clumps of rose bushes on the summit of the island, in the first he "unearthed" (literally) ten more buried eggs of the White-winged Scoter, and from the other clump, as he touched it, a great Scoter sprang up almost into his face, revealing a magnificent fresh set of fourteen large eggs. After careful examination of these fine trophies, we started "scotering." At the western end of the same island, on high ground just up from the water, was a great clump of tall rose bushes, nearly as high as one's head; the other clumps had been only a couple of feet in height. Near the top of this clump was the nest of a common Kingbird with three eggs. I crawled around in the briars beneath, and was about to leave when I thought I saw some dark down projecting from the bare ground. In a moment I had dug out six more Scoter's eggs. There was almost no nest, the eggs being simply laid in a hollow lined with a little down, and left buried in the earth. I then got into the open again just in time to see a female Scoter fly out from almost under the feet of my companion from another lower clump of rose bushes near by. There we found a typical nest with ten fresh eggs. I also found under a small clump of



NEST OF WHITE-WINGED SCOTER.

brush a fresh hollow, evidently a nest of the Scoter in preparation for the complement of eggs.

After some photography and egg-packing, having found fully twenty sets of ducks' eggs on this island, we proceeded to Island No. 1. The Cormorants flew as before. I expected to find most of the nests to contain young, but visitors had evidently robbed them, for most of them had fresh eggs. In only two nests were there young—three eggs and one chick, two eggs and a chick. The colony, by actual count, had exactly doubled in size since the former visit. I counted precisely sixty sets of eggs, instead of the thirty seen before. There was one set of 8, two of 7, two or three of 6, a number of 5, but the majority were, as previously, of 4, with a few scattering sets of fewer, probably incomplete. Four seemed to be the usual number. The settlers dislike Cormorants, as they are very destructive of fish.

The Ring-billed Gull colony had migrated to the other island almost to a bird. Probably they were robbed, and what young hatched, if any, may have been conducted over to what had become the main colony. While gazing at the empty goose nest of pleasant memory a flock of sixty White Pelicans flew over the island and alighted in the lake further along. The great birds were of very striking appearance as they moved gracefully onward in extended phalanx, to battle against the finny hosts of the lake, with their allies, the Cormorants.

We also found on this island a set of four eggs of the Spotted Sandpiper, the third of the day thus far; also, two sets each of the now familiar Baldpate and Scaup.

After dinner on the mainland, my other companion and I proceeded to Island No. 4. My one idea was now to look for clumps of bushes. I gave but passing notice to Baldpates and Scaups as they flew out of clumps of weeds from their nests. Of course I examined every

clump of weeds, for there was no telling what picture of consternation—poor thing! I gazed the search indicated that they must have regular bushes, or nothing. There proved to be but one clump of bushes on the island, and this not rose, but the common brush. "There must be a Scoter in here," I thought. With the end of my gun-barrel I cautiously parted the bushes and looked in. There, about a yard from me, sat a female Scoter, looking the very picture of consternation—poor thing. I gazed and gazed. She kept perfectly still and returned my stare. My thought then was to get the camera from the boat and photograph her. So I cautiously withdrew. But the bird recovered her presence of mind. The bushes parted, and out she waddled directly toward me, almost brushing against me, then taking to wing, to drop into the lake and then dive. This nest contained thirteen fresh eggs. All day I could see Scoters singly or in pairs swimming in the lake, and very probably there were more of them breeding on the shores of the mainland adjacent, though I had no time to search there.

The day's work reveals several facts about

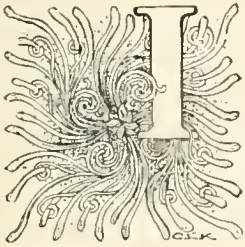
the nesting of the White-winged Scoter, at least in this locality. First, they lay their eggs almost on the bare ground, in a frail, rude nest. Second, the spot chosen is a clump of bushes. Their seeming preference for rose bushes, however, may have been due to lack of other kinds. Third, the nesting time is very late, and full sets of eggs can not be expected before the last of June or first week in July.

The other finds on this island were four sets of Lesser Scaup's eggs, three of Baldpate's, one of Gadwall's—eight eggs, just hatching—and one set of Spotted Sandpiper's.

This is certainly a remarkable locality. To find upward of fifty sets of ducks' eggs in a day is by no means a common occurrence, even in Dakota. My companion's estimate was sixty sets, but I have stated it well within bounds. The copious notes and the series of photographs, eggs and skins, secured here and elsewhere on the trip, are a fruitful source of pleasure to me. Of many interesting localities visited, one comes most often to mind. Many are the times that I dream of, and long again to set foot upon, "The Enchanted Isles."

NESTING OF THE WHITE-THROATED SWIFT.

By HAROLD C. WARD, Monterey, Cal.



I STARTED out to collect some Farallone Cormorant's and Western Gull's eggs from the rocks off the coast of Monterey County, California, with Mr. R. S. Wheeler, on June 2, 1898. The first night we stopped at the old town of Monterey, and next morning drove about 20 miles down the coast to some large rocks that lay one-quarter of a mile or less off shore. Mr. Wheeler took about 200 sets of Cormorant's eggs two years ago from these same rocks. As the boat which he used the last time was gone, we employed two Japanese fishermen to take us out. The fishermen live about three miles from the rookery, so we had them row the boat along shore, while we walked along the beach until opposite the rocks and then got in the boat. After landing on the rocks the only eggs we found were about fifty sets of Western Gull's. There were hundreds of Cormorants in sight, but no eggs. I suppose it was too early for them, as Wheeler had made his haul on June 20; but at that time he also found young birds, about half grown.

After spending an hour on the rocks we set out for shore, and as the surf was breaking too heavily to land at the place we started from, we made for a little sandy cove about a quarter of a mile further down the coast, in order to beach the boat. We had to take our shoes and stockings off to get ashore. After a little while I noticed some birds, which at first I supposed were Cliff Swallows. In about ten minutes they came down lower, and I saw they were Swifts. Just then one of them flew into a small crack in a cliff about 30

feet over my head. I called "Red's" attention to it (we call Wheeler "Red" because he has yellow hair), but he said I must be dreaming, as he had never known of Swifts in that locality. The next thing was to get at the nest, which was about 15 feet from the top of the cliff. I went half a mile back into the woods to an Italian's ranch, and asked the old lady to let me have her rope for a few minutes, as I saw one hanging in a coil on the fence. She replied, "no rope;" but I pointed to the one on the fence and told her that if she was afraid that I would not return it, I would leave \$20 on deposit with her as security. At last she said I could take it for one hour, but to be sure and bring it back, as she wanted to catch her cow with it at milking time.

On the top of the rocky bluff was a small pine tree to which I tied the rope and then climbed down. By putting my eye to the crack and looking in about 2½ feet, I could see the nest wedged in between the two walls. I only had an old horseshoe and a round cobble stone for tools; so you can imagine how I had to work. I thought if the old lady at the ranch was depending upon that rope for milk she would not get much supper. Finally I reached the nest and found, to my sorrow, that a small chip had dropped into it and dented two of the three immaculate white eggs, but left one perfect. The Swifts are very tame when in the rocks, as I caught the female bird by the tail and pulled her off the nest. While I was digging with the horseshoe, she kept up a faint squeaking that made me think there were young birds in the nest, and I came very near giving up the job. The nest was composed of feathers of all colors and a few pine needles, but was lined entirely with white feathers. There were two feathers about 5 inches long, which it was difficult to under-



NEST AND EGGS OF WHITE-THROATED SWIFT.

stand how the birds got into the narrow crack.

After securing this nest I found another, which I went down to, a few days later, in company with my brother Alan, but it was impossible to get it. I cut in about one foot, and there found a single fresh egg lying on the bare rock. It was at least 3 feet away from the nest, could not have rolled there without breaking, and may be accounted for, I suppose, in the same way as stray eggs of the Rock Wren, Burrowing Owl and others that are sometimes found away from the nest. Whether these eggs properly constitute part of the set may be open to question.

Since the eggs of this species were first described by Mr. Walter E. Bryant (Davie's Key to North American Birds' Eggs, 5th ed., p. 290)

they have become more fully known from the notice by Mr. Cohen (*OSPREY*, Dec., 1896) of the eggs taken by Messrs. N. M. and R. B. Moran, near San Luis Obispo, and the full account by Mr. R. B. Moran (*Nidologist*, Feb., 1897, pp. 63, 64) of his set of five taken May 16, and a set of three taken from the same site, June 16 of the same year. Their peculiar shape, size and appearance distinguish them readily from other small white eggs. The extreme difficulty and danger of securing them, even after a site is found, must long cause the eggs to be desiderata in collections.

In justice to Mr. Wheeler and myself, I should add that the rope which was so necessary in securing this set was returned. The eggs are now in the collection of Mr. Maillaird.

BLOWING INCUBATED EGGS.

By W. E. SAUNDERS, London, Ont.



LIBERT LAND'S note in *THE OSPREY* on the use of pancreatin in digesting and breaking up the contents of incubated eggs, touches a responsive chord in me. I have long thought of and wished to use pepsin, but it requires acid for activity, and acid would dissolve the egg-shell. So I pounced on Mr. Land's idea, and hereby tender him my thanks.

I used it roughly on a set of Prairie Horned Lark's eggs, taken on Good Friday, about two-thirds incubated; they rotted in three or four

days, and the contents came readily through a hole less than one-eighth of an inch in diameter.

On April 25th, I took five eggs of the Red-shouldered Hawk, all considerably incubated, and made accurate experiments. I was able to blow out only about one-fourth of the contents with the fountain syringe. I added one grain of pancreatin, filled up the eggs with warm water, shook well, and placed them in water at about 120 degrees, which was covered so it would not cool rapidly. Next evening the entire contents of one egg came away readily and the other four were nearly emptied.

The treatment was repeated, and in two hours three of them were readily emptied.

The other one yielded to a final effort next morning. I used what the druggists call 3,000 pancreatin, dissolved a dram in an ounce of water, adding about eight drops to each egg at once. The contents always came away readily, and no hole was made more than one-eighth of an inch. The membrane of an eye that came from one egg must have been at least three-eighths of an inch in diameter; one vertebra came away whole with the flesh

gone; while bones of legs and wings were too common to notice. If the eggs were kept at about 110 degrees, I believe the process would be complete in an hour; but the impossibility of thorough mixing prevents it all from coming at once.

Everything was odorless, which is a great improvement over the slower, odorous, cold process.

AN ORNITHOLOGICAL SERMON.

By F. R. STEARNS, Sac City, Ia.



THIS is intended to be a sermon, and all sermons are supposed to have a text, I take for mine two lines selected not from the Bible, but from Emerson:

"Hast thou named all the birds without a gun? Loved the wood-rose and left it on its stalk?"

Let me say first, that, although I have set myself to preaching a sermon, I am no minister in the ordinary sense of the word; and that my religion is the Gospel of Nature, which I believe to be the quickest, surest, and perhaps the only means of getting at the truth of things.

My text is in the form of a question, and I am afraid that but few readers of *THE OSPREY* can reply to it in the affirmative.

I can not reconcile myself to the wholesale destruction of birds, through the collection of their eggs, that is going on continually and increasing every year in the name of science; being accomplished mainly by those who claim to be actuated by a love of nature and her offspring, the birds.

Even in the columns of *THE OSPREY*, which has been a welcome visitor to me from the first number, and which I highly esteem for the good it is doing—even in these columns I have read accounts, related with much apparent satisfaction, of several sets being taken in one day of the same species. For this destruction there was no necessity whatever, and it robbed the world of some blessings which the Creator intended for man. It has even been

related how the second layings of the same birds were taken—an act not only wrong and useless, since the observations could have been made without shattering the bird's faith in mankind a second time, but cruel in the extreme, and one for which I would not wish to be called to account. I should consider it a crime against nature under whatever circumstances it might be committed, but especially so when no scientific benefit whatever resulted to other students of ornithology.

I do not wish to be thought a fault-finder, and I only say these things because man is of such a grasping nature that I am afraid we too often act without seriously thinking of the consequences. Are we robbing birds' nests and destroying birds that our posterity may be better informed? In my judgment it would be better to leave them the live birds; for one has little interest in birds which have become extinct, and does not care very much whether their eggs were blotched with brown or gray and whether they measured 0.80 x 0.60 or 2.20 x 1.40.

Are we collecting bird's eggs for our own pleasure? I have always been strongly of the opinion that the Creator's work was placed here for our enjoyment and instruction, not for us to ruthlessly destroy. Almost as complete data can be obtained, except in some few cases, without much destruction of life, and scientific work thus performed is so much more humane, that in time it would no doubt lead to a more intelligent understanding of bird life. If we love birds, let us not destroy them, but rather make them our friends, that we may study them more closely, and thus act in greater harmony with their Creator.



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Vol. III.

NOVEMBER, 1895.

No. 3.

Editorial Eyrie.



O SEVERE has proven to be the moulting process of THE OSPREY this autumn that at one time we feared it might be fatal. But the bird's sound constitution has developed staying powers equal to the unforeseen emergency forced upon it by an

unlucky printer who struggled in "THE OSPREY's claws" for seven weeks before he succeeded in producing the October number. In this protracted suspense the editors have experienced all the amenities and asperities of the occasion, ranging through the whole gamut of correspondence, from tender solicitude for the welfare of the bird to threats of legal prosecution for the recovery of one dollar, paid for subscription to the current volume. We can only say to our friends that if any one of them feels worse than we do about it, he has our heartfelt sympathy. We trust that the appearance of the present number will, in a measure, allay all doubts for the future. We also trust that,

should a similar accident happen again, all who feel grieved will proceed to roast the publishers and spare the editors. The latter are not angels, but they have "done their level best," and it is well known that "angels could do no more." The December number is in press, and the issue for January is nearly ready. Both will equal, if they do not surpass, the present number, in excellence and variety of contents and beauty of the illustrations.

One of the most important enterprises ever undertaken in ornithology has just been brought to a successful conclusion, by the appearance of Volume xxvi of the Catalogue of Birds of the British Museum, with detailed descriptions and copious synonymy of some 11,500 species, based on examination of nearly 400,000 specimens, and illustrated with 387 colored plates. We shall have more to say of this great work hereafter.

We learn with pleasure that the Cooper Ornithological Club, of California, will hereafter issue its own official organ, either bimonthly or quarterly, thus enabling it to print its proceedings and papers in full. This is doubtless the wisest course the Club could have taken, and the new publication has our hearty good wishes. THE OSPREY has always appreciated the many excellent contributions to its columns by members of the Club, and only regrets that the pressure upon its space made it impossible to do them full justice.

Mr. Charles B. Cory, Vice-President of the American Ornithologists' Union, has shown us a complete set of proofs of his new work, the Birds of Eastern North America, profusely and beautifully illustrated, upon the same plan that has proven so successful in the cases of two previous works upon the Shore Birds and Water Fowl. We hope for the speedy publication of this admirable treatise, which we imagine will become very popular.

The Oologist, a monthly publication devoted to oology, ornithology and taxidermy, reaches us promptly as usual. This is an old favorite, now finishing its fifteenth volume with No. 149. It is published at Albion, N. Y., by Frank H. Lattin, and the subscription is only 50 cents a year.

We hear of a project to establish a new bimonthly magazine of ornithology in New York, but as we are not informed in any of the particulars, we can prophesy better after than before the appearance of the first number.

We regret to learn that Lieutenant John W. Daniel's military duties have obliged him to abandon his proposed magazine of ornithology and oology.

Pigeon Holes.

SHEARWATER INLAND. What seems to have been a young Sooty Shearwater (*Puffinus stricklandi*, or *P. fuliginosus*) was found here in a garden on the morning of the 4th inst. some 350 miles from the coast. The bird seemed completely exhausted and died during the day. A heavy storm had been on the preceding twenty-four hours.—EDGAR MAGNESS, Attalla, Ala., May 10, 1898.

sparsely fringe a hillside overlooking the Seabasticook. All were busily feeding and shree, shree, shreeing, as though it were March instead of May. These are all I have seen since last November.—C. H. MORRELL, Pittsfield, Me.

LATE MIGRATION OF THE BRONZE GRACKLE.—During the past four years I have noticed flocks of Bronze Grackles or Crow Blackbirds migrating southward early in November. For three years in succession they



WHERE THE PEREGRINE BRED.

WHERE THE PEREGRINE BRED.—My old friend, S. S. Haldeman, is now chiefly remembered in ornithology as the authority for the name *Sialia sialis*, which he used for the Bluebird in Trego's *Geography of Pennsylvania*, 1843. About 20 years ago he gave me the photograph of Chickies Rock which appears in this number of *THE OSPREY*, and which was a place where the Peregrine used to breed before the railroad invaded that region. The view also shows Haldeman's house, in what is now the village of Chickies, or Chiques, Lancaster Co., Pa., on the Penna. R. R., about 25 miles southeast of Harrisburg.—ELLIOTT COOK, Washington, D. C.

BELATED FLOCK OF PINE SISKINS.—On the 16th of May I saw a flock of about 25 Pine Siskins in the birch and spruce trees, which

passed in the first week of this month, but as October of 1897 was quite warm, they did not pass until the middle of the next month. Those that nest here leave with their young the last of July and first of August. Can some of our ornithologists tell the readers of *THE OSPREY* how far north these late flocks nest?—J. C. ELLIOTT, Swanwick, Ill.

PILEATED WOODPECKER'S EGGS.—I had the good fortune to take this season three sets of Pileated Woodpecker's eggs, one of which contained a decided runt, as the following measurements show: 1.33 x .98, 1.33 x 1.00, 1.35 x .98, 1.00 x .85. I also took a set of five Spotted Sandpiper's eggs, which I think is an unusual number.—F. B. SPAULDING, Lancaster, N. H., August 21, 1898.

ALBINISM IN THE FIELD SPARROW.—On February 19, 1898, I killed an unusual specimen of *Spizella pusilla*, having only two colors—rufous and white. The extent of white coincides almost exactly with the dark and white areas of a normal individual; that is, the normal extent of dark coloration is replaced by white in this specimen, over all the quills of wings and tail. The rufous is not as dark as usual, becoming more cinnamon rufous on head and back, where it is the predominant color, and also tinges the forebreast and sides. Its distribution is the same as in the normal bird, but it is of a lighter shade, nowhere becoming bright bay. The combination of rufous and white produces an elegant appearance. The bird was one of a loose flock of other sparrows and was very conspicuous in life. When flying it seemed pure white. I had a warm chase after it and at last secured it by a long flying shot.—J. ROWLAND NOWELL, Anderson, S. C.

ALBINO BLUE JAY.—The Crittenden (Ky.) Press of July 7, 1897, states that Mr. J. F. Dodge has on exhibition a snow white Jay-bird. "He has the voice of the Jay, the movements and temperament of the Jay, but the plumage of the Swan." It was a young bird, just about grown, and had been caught near town. Mr. Dodge informs me that the bird has since died, and that its skin was not preserved.—R. H. DEAN, Washington, D. C.

ALBINO LARK SPARROW.—Yesterday I noticed an Albino Lark Sparrow, but having no gun I had to make the best examination I could at about 15 feet distant. The wing coverts were ashy, and a few feathers on the neck cloudy; the rest of the plumage being snow white. I am on the watch for this bird and hope to collect it before long.—W. E. SHERRILL, Haskell, Tex., September 2, 1898.

DUPLICATE NESTS.—In the spring of 1896 I found an empty Marsh Wren's nest, and on passing by later in the day, saw three nearly fledged young in it. There were also other nests near by, with one or more young in each. It seems to me probable that these duplicate nests are built, if the birds have a large family, for the young to roost in, at least at night, when they are too large to be all contained in one nest, but not yet able to take care of themselves. Mr. J. N. Baskett, in *THE OSPREY* for October, 1896, states that the Purple Gallinule builds several nests, and I have found the Sora Rail to do the same.—CHAS. W. BOWLES, Tacoma, Wash., October 9, 1898.

AN ECCENTRIC HUMMER.—That a Hummingbird should so far depart from its usual mode of nesting as to build in a hole in a stump, seems unlikely, yet, while I was residing in California, at Pacific Grove, in May, 1891, a boy pointed out to me a "strange nest" he had found in an old stump. On one side midway up the stump 3 feet in height and 6 inches in diameter, was the finished but deserted nest of Gairdner's Woodpecker. To look within the boy had torn away a piece of bark and af-

terward carefully replaced it. On removing this I found the cavity half filled with soft materials, similar to those used by the Bush-tit, and a quantity of cobwebs. This mass was flat on top and in a small cavity in its center rested two white, equal-ended eggs, about the size of those of the Bush-tit. The cavity of the nest was not larger than that of a typical nest of the Hummer and lined wholly with soft white plant-down.—L. W. BROKAW, Carmel, Ind.

FLAMMULATED OWL S.—During a protracted storm, beginning May 1 of this year, a male was found dead in a granary. On June 27 a female was flushed from her nest in a deserted woodpecker's hole in a pine stub, 12 feet from the ground. The nest contained two eggs, apparently fresh. Returning on the 30th, I stopped the entrance to the nest and caught the bird on it. The plumage was in very poor condition, as she had been long incubating. I set her at liberty, after making sure of her identity. The eggs were laid on a few fragments of oak leaves, and proved to be infertile; they were unequal in size, and smaller than is given as usual for this Owl, being 1.09 x 0.99 and 1.00 x 0.97, respectively. On September 12 a young male, not quite developed, was found in possession of our cat. All these birds had dark brown irides, very pale yellowish-green soles, and rusty scapular bars. They were found at an altitude of rather less than 7,000 feet.—P. L. JONES, Beulah, Col., October —, 1898.

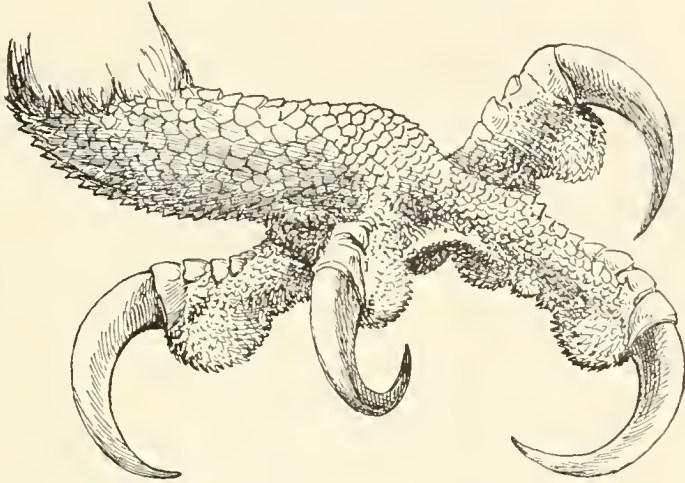
HAWK KILLED BY RATTLESNAKE.—A days ago a friend was out hunting, and while driving past a hay field saw a large Hawk in the middle of the field. He thought he would drive over and shoot it. He noticed that the bird was acting queerly. Every few moments it would lift up its wings to fly, but the wind would blow it over. He drove near it, and as the bird did not seem to notice, he got out of the buggy and walked up beside it. Then he saw what had caused the trouble. A small prairie rattlesnake was on the ground beside the hawk. My friend had no desire to interfere, as a hawk he had shot and wounded a short time before clawed and bit his hand badly. Early next morning I drove to the place, and found the hawk dead, but the snake was gone. The bird was a large female *Buteo borealis*; length, 24 inches; wing, 16.25 tail, 11; expanse, 54. There were two bites on the bird, one on the end of the wing at the base of the primaries, the other on the leg about half way up from the heel. I noticed no swelling, but there was a greenish discoloration of the leg bone, and my eyes pained me while skinning the bird.—J. S. HUNTER, Lincoln, Neb., October 3, 1898.

LATE NESTING OF THE MYRTLE WARBLER.—On July 20, 1898, I flushed a Myrtle Warbler from its nest, which contained two unfledged young but a few days old, and two infertile eggs. The nest was in a small arbutus growing on an open hillside near the river, about 4 rods from a thick growth that covered a part of the hill. On the 25th

one of the eggs had been removed from the nest, and I took the remaining one. In the bushes near by were four or five young Myrtle Warblers, evidently a first brood, as the old birds seemed to divide their time between them and the two in the nest. The latter grew rapidly; they were well feathered on the 26th, and on the 29th had left the nest, perhaps a little sooner than they would have done had I not visited them so often. The nest was placed 3 feet 10 inches above the ground; built of fine twigs, grasses, plant down, a few hairs,

and many feathers, some of which overarched the brim, partially concealing the cavity of the nest. The nest measures: Height, 2.50 inches; depth, 1.75; outside top diameter, 4.00; inside top diameter, 2.25. The egg measures 0.65 x 0.50. The ground color is grayish-white, wreathed about the larger end with spots of reddish-brown, brownish-black and lavender. The extreme end is unspotted. This case is unusual, as the Myrtle Warbler ordinarily rears but one brood a year.—C. H. MORRELL, Pittsfield, Me., August 2, 1898.

In the Osprey's Claws.



(Copyright, The Macmillan Company, New York, 1897.)

MR. FUERTES' spirited drawing of the talons of the Osprey shows one of the most perfect prehensile instruments to be found among birds. It also indicates, quite figuratively, of course, the powerful grip of THE OSPREY on whatever comes into its claws in the way of books and papers for review. Good writers have nothing to fear; they will find our grasp firm and friendly. Bad ones will discover the difference between justice and mercy when they feel the clutch of THE OSPREY's talons; and if they manage to wriggle off the hooks, as slippery fish sometimes do, they may be more careful in future. THE OSPREY aims to be absolutely impartial in its reviews; it is independent in all things, neutral in none that it touches; its criticism is based upon many years' experience in handling good, bad, and indifferent ornithological publications, and it will deal out praise or blame according to its highest ideals of excellence.

THE WILSON BULLETIN is issued bimonthly by the Wilson Ornithological Chapter of the Agassiz Association, Oberlin, Ohio, and edited by Lynds Jones. No. 23, or No. 6 of Vol. V, new series, November 30th, completes a volume and furnishes an index. The subscription is only 50 cents a year, and of late the irregularity of issue we used to notice seems to have been overcome. It is a modest little magazine, which can not be said of all amateur efforts, and we wish it all success.

THE SQUIRREL HUNTERS OF OHIO, or Glimpses of Pioneer Life. By N. E. Jones, M. D. Cincinnati: The Robert Clarke Co. 1898. 8vo, pp. vi, 363; many illustrations.

Dr. Jones will be pleasantly remembered by our older readers in connection with the beautiful illustrations of the Nests and Eggs of the Birds of Ohio, published some years ago, with many admirable colored plates in oblong folio. His present volume hardly comes within THE OSPREY's claws, as it is mainly historical, but some features of it are strictly ornithological. Chapter IV contains some notable biographical matter on the Wild Turkey and the Bob White, with both of which birds Dr. Jones is exceptionally familiar. With regard to the Turkey, in particular, Dr. Jones writes like the veteran that he is, and we know of no biography so good as this one since Audubon's.—E. C.

A REVISION OF THE WRENS OF THE GENUS THRYOMANES Scater. By Harry C. Oberholser. Proc. U. S. Nat. Mus., xxi, No. 1153, pp. 421-450.

The author will probably become an excellent ornithologist in due course, when he overcomes that exuberance of youthful enthusiasm which at present makes him amuse himself with splitting subspecific hairs between north and northwest sides. He is an astonishing adept in that occult operation, considering how few years have yet passed over his ornithological head.

Given a trayful of wrens of the genus *Thryomanes*, or of any other birds of any other genus, and standing in a good strong exposure to sunlight, say between 9 a. m. and 3 p. m. in winter, perhaps a little earlier and later in summer, Mr. Oberholser can turn out more kinds of a bird than anybody else, except, perhaps, Dr. Edgar A. Mearns or Mr. Outram Bangs, and provide them all with correctly formed, sonorous, not to say polyphloesboean, Graeco-Latin names. To our way of thinking, one good purpose is subverted in this way, that of the *reductio ad absurdum* of a proposition, by way of proving to the contrary. If Mr. Oberholser should plead in extenuation the example of some of his elders, we should remind him that "evil communications corrupt good manners," and that some such examples serve rather for awful warnings than for models. We refrain from detailed criticism of the new species and subspecies of this paper, because we believe the author is already in the grip of something more dreadful, if possible, than *THE OSPREY*'s claws—we mean the American Ornithologists' Union's Committee on Classification and Nomenclature. But we venture, in this connection, to make known a great secret regarding authorship. This is, that truly great authors always start with what they have to say, never say it but once, and stop when it is said.—E. C.

THE WILD FOWL OF THE UNITED STATES AND BRITISH POSSESSIONS, OR THE SWAN, GEESE, DUCKS AND Mergansers OF NORTH AMERICA, etc. By Daniel Giraud Elliot, F. R. S. E., etc. New York: Francis P. Harper, 1898. 1 Vol. 8vo., pp. i-xxii, 21-316, frontisp. and 63 pll. \$2.50; large paper, \$10.

This notable work is published uniform with the distinguished author's two previous books, respectively on the Shore Birds and the Gallinaceous Game Birds, in two forms—the regular edition at a very moderate price; the sumptuous large edition, of 100 autographic copies, being much more expensive. The text and plates are the same in each, and both are handsome specimens of bookmaking, upon which Mr. F. P. Harper is to be congratulated.

We are struck on opening the book with the altogether admirable portrait of the author, which forms the frontispiece—a speaking likeness of the genial veteran naturalist, which will best satisfy those who know him best. We have on other occasions expressed some not altogether favorable opinion of Mr. Sheppard's drawings of birds, and such view of this artist's limitations is not changed in the present instance. Perhaps we are a little hard to please in this respect, but it can be truthfully said that the plates of this work are in all cases recognizable portraits of the birds represented, and that is the great point, after all. We think the birds themselves would stand out better against white paper than they do within the needlessly heavy scenery in which they are framed.

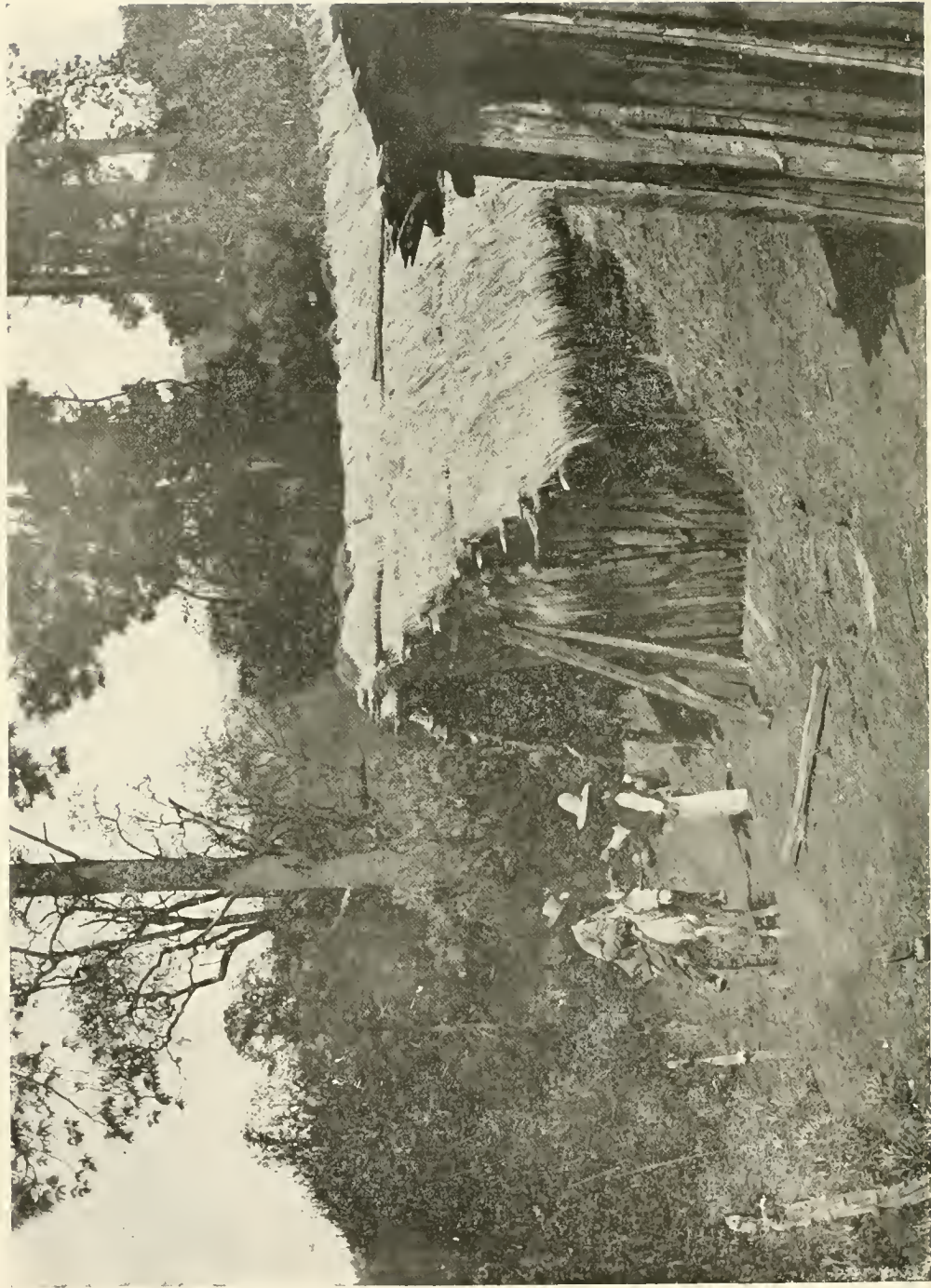
Those who are familiar with Mr. Elliot's previous two volumes already mentioned may feel sure that the plan of treatment which proved so successful in those cases is carried out in

this instance with no falling off in excellence. The three books are so similar they might be regarded as three volumes of one work, though each is complete in itself and independent of its companions. The "trilogy" thus concluded by Mr. Elliot's industry and ability comprises the three great groups of birds which have the most interest to the general public and to the sportsman in particular. There is no question that the high place already taken by these volumes will become permanent in the literature of the subject.

Mr. Elliot's plan of treatment is clear and simple. Each species is treated at length, biographically; each is also more briefly and technically described; and each is figured. The biographies are reliable and so well written as to make pleasant reading. The descriptions, we are glad to say, dwell especially upon the too often neglected plumages of female and young birds, which, in this family, as a rule, are notably different from those of the adult male. Many persons who know the old drakes very well are often puzzled over the ducks and ducklings.

The body of the book consists of these biographies and descriptions, but an appendix gives a useful key to the subfamilies, genera and species, and also the etymologies of the Latin names—a notable feature. In his classification and nomenclature, Mr. Elliot shows that he has opinions of his own and is not afraid to express them; that is to say, he follows the A. O. U. Code and Check-list when he thinks proper, and differs from it when he thinks he can improve upon it. This is not difficult in the case of the Anatidae, which, as we lately pointed out in *The Auk*, are badly handled in the Union's list. The sequence of the species is very bad; there are also too many subspecies and not genera enough. Mr. Elliot differs from the Check-list in perhaps twenty cases of names in this one family, and we trust that the committee which holds all this matter in the hollow of its collective hand will reckon with Mr. Elliot, most of whose departures from the Union's nomenclature seem to us distinct improvements upon it. We also note to our joy the outward signs of that inward grace which makes Mr. Elliot try to spell right, instead of preferring to spell wrong, as is done in so many cases by the distinguished impurists, or advocates of illiteracy, who at present, we believe, have a majority of four to one on the nomenclatorial committee. With Mr. Elliot's powerful assistance, and by his personal example of purity and virtue in this matter, we may hope soon to eradicate from our code of nomenclature that ridiculous Canon XL, so offensive to scholarly naturalists.—E. C.





A Collector's Camp on the Slope of Mount Orizaba.

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A MORNING WITH THE BIRDS ON MOUNT ORIZABA.

By E. W. NELSON, Washington, D. C.



THE Volcano of Orizaba rises boldly from the eastern border of the Mexican tableland in the State of Puebla. When free from clouds its snowy cone is a notable object from all the surrounding country. The tableland at the western base of the mountain is devoid of trees, but at the foot of the slope, at an altitude of about

8,600 feet, a broad belt of coniferous forest begins and extends up to 13,600 feet.

While working on the adjacent tableland in sight of this mountain, I looked with interest toward its slopes in the hope of finding many unfamiliar birds when the time should arrive to visit it. When the mountain was finally reached I was surprised to see how closely the bird-life of the western slope, where the first work was done, resembled that of the southern Rocky Mountains in the United States. Later in the season, when the eastern side fronting the tropical lowlands was visited, many birds new to us were seen, and in a few hours' travel we had an opportunity to trace progressive changes in bird-life through several faunal zones. The present notes, however, are limited to some of our first experiences on the mountain side.

The last of April, a few seasons ago, Mr. E. A. Goldman and I camped in the forest on the western slope of Orizaba at an altitude of 11,200

feet. Nearly 3,000 feet below us the tableland extended westward like a brown sea, with irregular billows where hills and ridges broke the general level, and appeared to surround the higher mountains that rose island like in their midst. The Indian hut in which we camped was a rude affair at the edge of a clearing, a few acres in extent, where wheat and potatoes were cultivated in a small way. All about were pines, firs, tree alders and madrones, with a scattered undergrowth of various species of shrubs. The uncultivated parts of the fields and the more open parts of the forested slopes were covered by an abundance of grass.

It was with much interest that I started out, gun in hand, just as the sun sent its first rays down the mountain side, the morning after our arrival. Many Juncos and Chipping Sparrows (*Junco phaeonotus* and *Spizella s. arizonæ*) were out foraging for an early breakfast among the scanty weeds in the potato field and, as I skirted along a row of tall bushes forming a broken hedge on one side of the cleared ground, they amused me by the panic-stricken manner in which they skurried into shelter, alarmed by my approach. The Chipping Sparrows were found in open ground only, but the Juncos were everywhere, as appeared later, even among the tops of tall fir trees in the denser parts of the forest, where two or three were shot when too high to be distinguished from other small birds with which they were consorting. Among the bushes on the far side of the field several finches (*Pipilo maculatus* and *Chamaospiza torquata*) were singing from the topmost twigs, but always on the alert and ready to dive into the leafy shelter below when I came too near. It required considerable maneuvering to get specimens of these birds, they were so wary and expert at the game of hide-and-seek. A small flock of Jays (*Aphelocoma*) went trooping off through the open pine woods as I left the fields, and several Diadem Jays (*Cyanocitta diademata*) were seen during this part of my walk. The Mexican Nuthatch (*Sitta c. mexicana*) was rather common on scattered trees about the clearing, and Pigmy Nuthatches (*Sitta pygmæa*) were often heard piping their little calls to one another or drumming vigorously on dry branches in the tops of trees.

After entering the forest my attention was drawn to a hill slope on the farther side of the

field, by one of the richest bird songs that ever reached my ear. The notes rose clear, full and surpassingly sweet. Turning back I approached a bunch of large bushes whence the unfamiliar music came in almost unbroken strains, and desiring to know their author reluctantly fired at an indistinct form seen through the foliage. Hastening forward I found the bird lying beneath the bush, and my regret at having killed such an exquisite songster was partly forgotten in the pleasure of securing one of the rarest and least known of Mexican birds, the Ocellated Thrasher (*Harporhynchus ocellatus*).

The digression from my original course caused by the Thrasher's song, started me in a new direction over the top of a low grass-grown ridge dotted with scattered trees, among which were found a number of Bluebirds (*Sialia mexicana*), a small flock of Jays, and some Striped-breasted Woodpeckers (*Melanerpes formicivorus*). Stopping on the summit of the ridge to regain my breath, I enjoyed a glorious view of the snowy peak of Orizaba towering high above the forested slopes. On the farther side of the ridge, where the descending slope had a cool north exposure, favorable to the retention of moisture, it was a surprise to find a dense growth of tall, slender firs and pines, beneath which the ground was softly carpeted with mosses or covered by thickets of low undergrowth. Under the shade of the interlaced tree-tops the light was dim, and with the cool air and moss-tufted tree trunks, gave the impression of a forest scene near the northern border of the United States rather than one in the tropics. In places where the tree growth was more open the entering shafts of sunshine caused the iridescent colors of the White-eared Hummers (*Basilinna leucotis*) to flash and glitter as the birds searched eagerly for nectar in the scarlet flowers of *Salvias* and *Bouvardias*. Many Stephens' Vireos (*Vireo h. stephensi*) were uttering their warbling songs on all sides and Pileolated Warblers (*Wilsonia p. pileolata*), in their usual restless manner, hopped and fluttered about everywhere. Several Red Warblers (*Ergaticus ruber*) were encountered here, and against the dark background of the evergreens their bright plumage caused them to appear like little sprites robed in glowing flame. These birds, on account of their bright colors and warbler-like habits of searching the outer twigs of trees, are among the most conspicuous of the smaller species. From the number of Crested Jays seen and heard in the depths of this shady forest it appeared to be their favorite

haunt. The Mexican Creeper (*Certhia f. allicola*) and the Western Robin (*Merula propinqua*) were seen also, and a pair of Red-tailed Hawks (*Buteo b. calurus*) circled slowly overhead.

It was becoming late and the reports of my companion's gun, at first distant but now sounding in the direction of camp, caused me to turn back with eager interest to see what treasures he might have secured. As I passed an open glade near a little spring a small flock of Band-tailed Pigeons (*Columba fasciata*) flew suddenly out of the neighboring tree tops with loud, startling wing-clapping, and hurried away over the mountain side. Several Red-shafted Flickers (*Colaptes cafer*) had entered the fields during my absence and were searching for food among the clods of upturned earth with Robins, Bluebirds, Juncos and Chipping Sparrows; and a pair of Ravens (*C. c. sinuatus*) were grubbing away among the tussocks of grass on the open slope. In a fence corner a curious bunch of wild gooseberry bushes in full flower were so attractive that a few branches were taken for botanical specimens; and it interested me greatly to learn, at a later date, that this plant was discovered by Alexander von Humboldt during his celebrated travels in Mexico at the beginning of the century, and had remained unknown to botanists until rediscovered during this morning's tramp. My companion had made a circuit through the forest on the side toward which my steps were first turned, and among his captures were the rare Strickland's Woodpecker (*Dryobates stricklandi*), Olive-sided and Coes' Flycatchers (*Contopus borealis* and *C. pertinax*), Mexican Wren (*Troglodytes brunnicollis*), Mexican Chickadee (*Parus sclateri*), Small headed Flycatcher (*Scotophaga miniata*) and two species of *Empidonax*. The skinning kit was soon arranged on the shady side of the hut, where we began preparing our specimens, keeping a gun close by in order to take advantage of any opportunity that might arise to increase the collection. In a short time a small flock of Violet-green Swallows (*Tachycineta thalassina*) was seen circling over the clearing, and from trees close by specimens of the Mexican Crossbill (*Loxia c. stricklandi*) and the Pine Siskin (*Spinus pinus macroptera*) were secured. Among various other birds several Audubon's and Townsend's Warblers (*Dendroica auduboni* and *D. townsendi*) were seen in the bushes close by; but they were not molested, and after tarrying for a short time, passed on toward their summer home far to the north.

SOME OCEAN WANDERERS OF THE NORTH ATLANTIC.

By REV. HERBERT K. JOB, North Middleboro, Mass.

THE fact that it is so rare to find any account of these ocean wanderers may indicate that most bird-lovers are deterred from studying them in their haunts, either by the terrors of Neptune or by lack of opportunity. To many "Shearwater" is a mere book name, or known only through the data slip on some purchased skin. I think there is no class of birds more neglected—one that offers more prizes to the investigator who is not afraid of cold or wet and the dangers of the ocean.

"Not uncommon off the coast in winter" is the customary remark with which, in many books, these interesting species are consigned to oblivion. But even this limited information is based more upon guess than observation, for some of them are both common and found in summer.

To study these birds successfully one must find some place of vantage. It is not necessary to toss in a foul-smelling fishing schooner far off shore on the dangerous, rough and foggy

"banks." All these birds are found, to be sure, far from land; yet they are just as abundant a dozen miles off some projecting point as a hundred miles further out. For years past I have had two such places of access. One is Chatham, Mass., at the elbow of Cape Cod; the other is Cape Sable, Nova Scotia. At these places fleets of sail boats go for fish well off shore each favorable morning, returning at night. The abundance of ocean birds in these



"Fleets of Sail Boats Go for Fish."

localities is due to the fact that they follow the migrations of fish, feeding upon small fry or the leavings of whales and other marine creatures. One may sail over vast tracts of ocean and see only scattering birds, while on the fishing grounds there may be, and often are, hundreds and even thousands. Because the waters of Cape Cod and Cape Sable swarm with fish, they also abound in bird-life.

From either of these points let one accompany a fisherman some day in sultry August. If the desire is to meet Shearwaters in abundance, Chatham is the place; if Jaegers and Phalaropes are wished for, Cape Sable is better—though all these birds occur in either place. The distance from land at which they are found varies from day to day, apparently according to the location of fish or other bait. Sometimes few can be found inside of a twenty mile limit, and again they are quite close in. One morn-

ing in the afternoon, many Shearwaters and Petre's were flying only half a mile out, diving eagerly at schools of fish that agitated the water.

Two kinds of Shearwater are very common off this coast in summer, the Greater (*Puffinus gravis*) and the Sooty (*P. fuliginosus*). The former is the more abundant, but the other is very common, and on some days seems to outnumber the Greater. The waters off Chatham are the one known resort of the recently discovered Cory's Shearwater. Mr. C. B. Cory records the first specimens known to science from this locality in the summer of 1881. On August 2, 1883, I secured two single birds of this species, and shot down another that fluttered off as I was about to pick it up, my gun being empty. All these birds are called "Hags" or "Haglets" by the fishermen. Their flight is peculiar, the wings being held straight out. Usually they wander singly, searching for food.



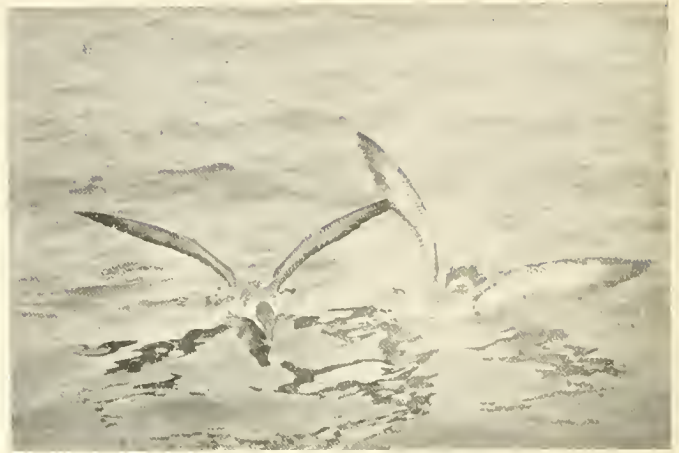
"Two Kinds of Shearwaters."

But when a school of fish is discovered they pour in from far and near, flapping about on the water, diving, squabbling, grunting. On a calm day they rise from the water with difficulty always facing the wind; but, once awing, their flight is graceful, swift and powerful. They follow the fishermen persistently, and no collector without a gun need want for specimens, for they take the hook nearly as well as codfish. I have hauled them in as fast as I could throw a small line baited with cod-liver, while the fish-

men rivaled me with the boat hook. This was when we had baited up a large flock around us.

Until recently they have been considered winter visitors, their breeding resorts being unknown. Now they are known to be of antarctic origin, nesting in remote southern latitudes in our winter season, then wandering up to the other end of the earth, spending their winter with us in our summer months. They begin to arrive on the New England coast in May, following the first schools of small fish, and are most plentiful in June, July and August. The numbers begin to lessen in September, and by the last of October or first of November they practically disappear, being seldom if ever seen in winter. I am confident of having seen a single Greater Shearwater December 31, but if so, it was a straggler from the great horde headed for the far south.

Another of our summer visitors from the south is Wilson's Petrel, whose migrations seem to correspond with those of the Shearwaters, both in time and extent. One can find Petrels off the Massachusetts coast at any time of the year, but my experience has been that, aside from possible rare stragglers, those seen in summer are Wilson's, those in winter, Leach's, the two intermingling in spring and fall. The Leach's breed abundantly on the islands off the coast of Maine, where I have found them by the thousand laying about June 15—and from there northward, one seldom sees a bird flying near the breeding grounds, except at night. Both sexes take turns in warming the white egg in the rat-like burrow, relieving one another at night. The ones not thus occupied seem to fly far out to sea, where, in that latitude, they doubtless



"Their Flight is Peculiar."

them at that season, and the fishermen say they are very rarely seen. It is amazing that such frail little things can survive the ragings of the ocean, never taking refuge on land except to breed, and that our little southerner can fly from Kerguelen's Land to Massachusetts and back without fatal weariness. That sometimes, however, a severe storm is too much for them I believe from seeing, during the violent easterly gale of October 11-13, 1896, a poor Leach's Petrel, bedraggled, oil-smeared and almost dead, wash ashore on Cape Cod, and lie fluttering on the beach, unable to rise.

Though I had met occasional flocks of Phalaropes off Chatham, I had no idea of their real abundance until I visited Cape Sable, N. S., in August, 1895. Half a dozen miles off the cape the ocean was fairly alive with these tiny and beautiful birds. One day there were literally acres of them. As I rowed toward them in the ship's boat they did not fly, but simply opened a channel for me through their ranks, closing up again when I had passed. Most of them are Northern Phalaropes (*Lobipes hyperboreus*), with a few Red Phalaropes (*Phalaropus fulicarius*), scattered in among them. All the red breasts have become white by about the middle of August. I have met the Northern Phalarope on the coast of Maine as late as the middle of June, and



"We had Baited up a Large Flock."

they begin to return at Cape Sable toward the end of July. The time of special abundance is the last half of August. By the middle

of September most of them have gone on, though I have found the Red Phalarope on the Massachusetts coast as late as middle October. Even when abundant off shore they are seldom seen on land, or even close inshore. But an easterly gale, or at times a dense fog, may cause a sudden irruption of them for a short time. The fisherman of Cape Sable told me that early one morning in August, 1894, after a calm night of unusually dense fog, the shores and flats were fairly swarming with these birds. The fog soon lifted, and they were at once away. With us they are emphatically ocean birds. At Cape Sable they are known as "Sea Geese;" at Chatham, as "Whale-birds."

Other unique and interesting birds are the Jaegers or Skuas. Their habit of securing food by chasing the smaller gulls and terns, and forcing them to disgorge, is well known. Yet that for the most part they earn their own living one can surmise as he sees them around the fishing vessel eagerly seizing any offal thrown out. Though not so ridiculously tame as the Shearwaters, they can readily be baited up and shot. One begins to find them returning from the north by the middle of July. From that time until the middle of October, they become more and more plenty, at which latter time, with the exception of gulls and ducks, they are probably the most abundant ocean birds. Most of them go further south during the cold season, yet they are found sparingly off our coast all winter. Contrary to the usual supposition, the Pomarine Jaeger (*Stercorarius pomatorhinus*) is the most abundant of the tribe. Next comes the Parasitic (*S. parasiticus*), which is common. The Long-tailed or Arctic (*S. buffoni*) seems to be rather scarce, to my knowledge.

It is interesting to be off-shore on a pleasant

autumn day when Jaegers are abundant. Bait them up around the vessel where they can be observed closely, and what marvelous variation is seen! Long tails, short tails, white breasts, spotted breasts, plain wings, barred wings, sooty, part sooty, not sooty, large, small, medium, and all the rest. One is always discovering new "species."

Even icy winter is a fruitful time for bird study on old ocean. Time and space fail me to descant, as I would like to do, upon the Grebes, Loons, Auks, Guillemots, Puffins, Gannets, Cormorants, Gulls and Sea Ducks of our winter fauns. A mid-winter trip to the coast has fewer hardships and more delights than many would suppose. But I doubt if any pleasanter episode can well occur in the experience of the ornithologist than on some mid-summer day, when on shore all is hot and dusty, the land birds ragged in moult and skulking silently in the thickets, to fill the lungs with the cool ocean breezes off where land appears as a mere dim haze, surrounded, as one often is in the right place, with the varying phenomena of ocean bird-life. Petrels patter over the waves, chattering sociably; Shearwaters glide gracefully on tireless wings, or flutter greedily down to seize some proffered morsel, uttering weird, wailing cries; lovely unsuspecting Phalaropes ride at anchor in squadrons, a miniature fleet; while over all scales the voracious Jaeger, ever alert to fill its maw. The agile Porpoise leaps from its briny dominion, while the Finback Whale spouts to the accompaniment of the cavernous roaring of the tidal waves which rush from its great back as it emerges. Even the veriest landlubber is wont to forget himself and exclaim:

"The life for me is the life at sea."

NOTES ON THE STREAKED HORNED LARK.

By J. H. BOWLES, Tacoma, Wash.

SIX miles from Tacoma, where dense woods change suddenly into long stretches of prairie, the Streaked Horned Lark (*Otocorys alpestris strigata*) is one of our common summer residents, though peculiar in its distribution, large areas being almost untenanted, where the conditions are to all appearances perfect. This seems strange, since, half a mile further, one comes upon very similar surroundings where a bird may be flushed on an average of every hundred feet. The ground they prefer is at a distance from water, where the soil is dry and sandy and the vegetation consists mainly of short grass, mixed with sparse clumps of small prairie ferns, which grow to a height of six or seven inches in large patches.

The Larks arrive here about the fourth week in March, coming suddenly in large numbers, and return to the south as soon as their last broods are strong enough to stand the journey, about the middle of October, or earlier, when they gather in flocks of 40 or 50 and leave as suddenly as they came.

During the nesting season, on warm days when there is no wind, the males have a very pretty habit, toward evening, of soaring to a height

of about one hundred feet, hovering for a few seconds, and then fluttering down again. The flight is rather slow, the motions of the wings being short and quick, and, from the time the bird leaves the ground until it alights, it utters a low, clear and pleasant twitter. How many broods a pair of these birds raise in a season I cannot say with certainty, but I doubt there are more than two. In New England one can decide, almost to a day, the date on which to secure a set of eggs of almost any bird. Here in Washington, however, probably owing to the mildness of the climate, many birds may be found nesting at any time in May and June. The bird under discussion is more eccentric in this respect than any other; one may confidently look for eggs between the first of May and the last of July—how much earlier or later I am unable to state. The site selected for a nest may be almost anywhere on the ground. The birds usually scratch a hollow in the earth about three inches deep, but occasionally place the nest in the rut of a cart wheel, or the foot-print of a cow or a horse. The only two nests with eggs that I have taken were found by accidentally flushing the bird while I was playing golf

on the links of the Tacoma Golf Club, and all my information has been given me by other players. Though the links are used by dozens of people every day, many more Larks are to be found there than in any other locality; the birds become very tame, and apparently prefer human society.

My first nest was found on May 22, 1897, and contained three eggs, about half incubated. It was situated ten feet from the edge of a "putting green" (golf players will know what I mean), in the center of a clump of scattered ferns, and in a saucer-shaped hollow evidently scratched by the birds themselves. The female left the nest when I was but two feet from it and ran about twenty feet, where she remained feeding until I left, making no complaint and showing not the slightest uneasiness. The nest was level with the ground, and composed of fine dead grass, with flowers of everlasting weed for a lining. It is the larger of the two in my collection and I think about average size, the external dimensions being: width 4.00 inches; depth 2.75 inches; internal width 2.50 inches; depth 2.25. The three eggs were placed with the small ends together, in the same manner that Sandpipers and Plovers arrange their eggs. The ground color is slaty-white, scattered rather thickly over the entire surface with small, faint spots of greenish brown, excepting in one specimen whose brown spots have a tinge of red. The measurements are: 0.83 x 0.61; 0.83 x 0.59; 0.82 x 0.59. Another nest was reported to me on the same day that

contained two young birds and one egg about to hatch.

My other nest was found July 26, 1897, in the same accidental manner. This was within 25 feet of a golf hole, well up on a "putting green," where there was no shade or concealment, the grass being not a quarter of an inch high. It is strange that the eggs had not been stepped on or broken by a ball rolling over them. This nest, also, was in a hollow evidently scratched by the birds, apparently in a great hurry, and composed entirely of fine dead grass. Its measurements are: external diameter 3.00; depth 2.00; internal diameter 2.25; depth 1.50. The two eggs have the same slaty-gray ground color as those of the first set, but the markings, though similar in distribution and size, are much browner. Incubation was about two-thirds advanced. Their measurements are: 0.83 x 0.60; 0.82 x 0.58. The female flushed when I was some fifteen feet distant, flying up into the air and not coming back while I was in sight.

Of the number of eggs that complete a set as a rule, I do not feel positive. Numerous sets of three have been reported, and other sets of two and of four, all from the same locality; but I am not sure that the alleged sets of four may not have belonged to the Western Vesper Sparrow (*Poocetes gramineus confinis*). I had no time to collect any of these reported nests, but am fairly well satisfied that three is the usual number of eggs, seldom more or fewer.

NESTING OF VIRGINIA'S WARBLER.

By W. B. JUDSON.



My first acquaintance with this rare little Warbler was made in the mountains of Southern Arizona one morning while I was in camp skinning birds. The other boys had all gone collecting and left me with a couple of rifles, but no shotgun as they thought I would be skinning all day and would get no chance to shoot. It was about the first of May that this little bird disturbed my thoughts by sitting in a small tree a few feet off and keeping up a racket on account of an Arizona Jay that was in the same tree. After skinning the Cones' Flycatcher which I was at work upon, I went out to examine the small bird with a big noise which I could not recognize. Taking a good look without recognizing the species, I decided that I wanted the bird, and made preparations accordingly. I took one of my rifle cartridges, a 45-70, loaded it with shot, and getting within a few feet of the bird I was able to bring it down. A few days afterward, while up the same canyon, I shot a female with an egg almost ready to be laid; so I concluded it was about time to hunt for nests. On the 17th of May I started out to visit a part of the moun-

tains I had not yet explored, a short distance from camp.

The canyon I went up was steep, rocky, and pretty well covered with large pines. After going about a mile I sat down to rest before tackling the next hard stretch. Then I saw a Painted Redstart fly across the canyon and disappear on the opposite side amongst rocks and grass. I immediately gave chase with the expectation of finding a nest, but was disappointed when I found the bird was only looking for food, and so thought I had a hard climb for nothing. But I was mistaken; for just as I was about to take vengeance on the poor Redstart, I almost stepped on the nest of a Virginia's Warbler which was hidden in the grass at my feet. The nest was placed on the ground under a bunch of grass, so well concealed that it would have been impossible to find without seeing the bird leave it. The position was 30 feet from the bottom of the canyon, and at an altitude of 7,000 feet above sea level. About 10 days later I went up the same canyon again, and found another nest containing four birds, just hatched. This nest was about 300 yards from the first, and was located exactly like the other.

On the 1st day of June, in company with Mr. O. W. Howard, I made a trip to the same canyon and located the third nest, which contained a fine set of four fresh eggs. I had climbed a large rock to look into a small cave; after getting

down I stooped to pick up my gun, and as I looked up I saw a Virginia's Warbler fly down from a tree and disappear in the grass, right above where we were. It took several minutes to climb to the top of the rock and get a breath. I thought I knew exactly where the bird had alighted, but had miscalculated by a few inches, and it took a couple of minutes to flush her. Even then I had to hunt for the nest, though I had seen the bird leave the ground

within three feet of me. The nest was under a bunch of grass, and had a small opening through which the bird passed. It was placed on the side of a hill in exactly the same way as the preceding ones. The bird was quite wild, and we had to keep out of sight and wait several minutes before we were able to shoot, though we could hear her in the bushes a short distance off.

A SUMMER TRIP TO YOSEMITE.

By MILTON S. RAY, San Francisco, Cal.

A more tiresome drive than over the arid plains of the San Joaquin Valley on a hot day can hardly be imagined. Scarcely any life is visible, excepting numerous Ruddy Horned Larks, and even these seek shelter in the shade of the fence posts. We started from Stockton on the morning of May 23, 1898, and after driving all day reached Knight's Ferry on the Stanislaus River. Here in the thinly wooded hillsides I saw numerous Mocking Birds, and the next day, on the ledge of a cliff, about 20 feet above the river, I found a nest of the Valley Partridge containing eight fresh eggs. Leaving Knight's Ferry on the 26th, we made Jackson-ville late in afternoon and pitched our camp by the rushing Tuolumne River.

Bird-life was very abundant here, especially Arkansas Kingbirds, Bullock's Orioles, and House Finches. I found many of their nests in the low scrub oaks. I also ran across a colony of Phainopeplas on the hillside, where I took three nests containing three eggs each and one with two eggs; two others contained young. They were all placed near the top of small scrub oaks.

We resumed our journey on May 30th, and by dusk reached Big Creek, at an altitude of 2,900 feet. Here at the beginning of the timber lands we saw the first Western Robin on the trip and several nests of the Barn Swallow were also found in deserted tunnels along the creek.

Two days later we had established our camp at the foot of the Royal Arches, along the icy waters of the Merced River. The first nests I found were of the Western Chipping Sparrow, Yellow Warbler, Black-headed Grosbeak, Spotted Sandpiper, and Western Robin. While crossing an orchard on June 2d, I discovered a nest of Audubon's Warbler in an apple tree about eight feet from the ground. The nest was composed of fine rootlets, stems, and grasses, lined with feathers and horse-hair, and contained four fresh eggs.

One day we took a trip to Glacier Point, 7,191 feet high, where the only birds I saw were a solitary pair of Spurred Towhees and a few Black and White-throated Swifts.

On June 5th I took two eggs of the rare Hermit Warbler (*Dendroica occidentalis*). The nest was placed in thick shrubbery (*Malva occidentalis*) along the river. The birds were very bold, particularly the female, which fluttered along

the low branches almost at my feet. The nest closely resembles five of the Yellow Warbler which I took during my stay, except that it is lined with grasses and a few hairs, the plant-down lining of the latter being wholly absent. The eggs have a greenish-buff ground color and compared with those of *Dendroica aestiva* are much smaller and more heavily marked.

Among the tall pines, cedars and firs, Blue-fronted Jays, Band-tailed Pigeons, and Woodpeckers were common. In the live oaks, poplars and alders along the river, Orioles, Grosbeaks and Warblers kept up a continual concert.

Sunrise on Mirror Lake, where the surrounding cliffs, some 5,000 feet in height, reflect in the placid waters of the lake, makes a grand sight. Tree Swallows are very common about the lake, nesting in the lofty dead trees.

Two eggs of Anna's Hummingbird were taken June 9th from an apple twig. The exterior of the nest was prettily decorated with dark-colored lichens.

The last nest I found belonged to a pair of Lazuli Buntings. It was placed in a wild rose bush and contained three eggs. One was plain pale blue, another had a few specks of light reddish-brown, and the last was heavily marked with the same color, principally around the larger end. This is of very rare occurrence.

We started homeward on June 11th, making Crane Flat (6,054 feet high) by noon, where we stopped for a rest. A lonely pair of Mountain Bluebirds seemed the only tenants of the deserted hotel and dilapidated out-buildings. Between here and Tamarack Flat (6,234 feet high) the snow plant (*Sarcodes sanguinea*) is very common. Its brilliant, semi-translucent stem and bells of a deep blood-red make it conspicuously the most beautiful flower in the Sierras.

On June 13th we reached our former camp on the Tuolumne, which had lowered at least two feet during our absence. Although most nests now contained young, I had the good luck to find four typical eggs of the Western Gnat-catcher (*Poliophtila cirrula obscura*). The nest was in a scrub oak ten feet from the ground. Contrary to what seem to be the rule the exterior of this nest was thickly covered with lichens, and being a neat compact structure, was hard to find. Leaving on June 21st we arrived in San Francisco two days later without incident, and so ended this enjoyable trip.

AN ODD NEST OF THE WESTERN FLYCATCHER.

By GEORGE F. BRENINGER, Phoenix, Ariz.



None of the dark gulches that drain the Santa Cruz mountains, back of the city of Santa Cruz, Cal., nestled among the depths of a heavy growth of redwood trees, stands a lonely woodchopper's cabin. It has long been abandoned by man, and turned over to the denizens of the forest. Squirrels ran freely through the

open windows and door-ways, from which the sash and doors had been removed by persons who thought they could put them to better use. From the general contour of the ground, with its gigantic redwoods, the little stream of cold, running water, not far from the cabin door, winding over its bed of moss-covered stones, among fallen tree trunks, and luxuriant ferns, the oak-covered hillsides, and the grassy glens, offered food and refuge to many species of birds. This fact alone was sufficient to call me away from my daily routine of work on many occasions during the spring and summer months. In June, 1896, shortly after my return to California, after a sojourn of four months in Arizona, thoughts of the cool winding stream, its ferns and its redwoods, took possession of my mind and I was not long in hieing myself thither.

As I approached the cabin a pair of Western Flycatchers (*Empidonax difficilis*) greeted my arrival with many twitterings and misgivings.

The cause of their uneasiness was fully explained as I entered the cabin.

Above the window protruded a few tell-tale straws. By standing on the sill of the window frame I beheld a row of ten distinct and well-formed nests, joined in one continuous row, with a brood of four recently hatched young occupying the nest nearest to the center. The nests nearest and on both sides of the one occupied by the young were complete; each succeeding nest was less so, until those at the ends were merely outlines of the nest hollow. After the young had flown, I carefully collected the nest, which I accomplished by rolling it up. Its length was almost a yard, with a width of four inches.

The different nesting sites chosen by the Flycatcher show a wide range of variation. I have collected eggs from nests placed on beams of abandoned buildings, from nests built in the banks of road cuts, among the upturned roots of fallen trees, and in trees variously situated, some in open positions, others well concealed among the foliage.

I have also found nests built upon the rough interior of redwood stumps. In Butte County, Cal., while following down a mountain stream, I started a female Flycatcher of this species from its nest, which was placed in the hollow end of a log, which had lodged in such a way as to leave one end about six feet above the water. The nest was made largely of green moss, quite different from most nests that I had previously examined.

The eggs of this species are handsomely marked with bold flesh-colored markings on a cream-colored shell. Three or four eggs constitute a set, which are laid in May and June, somewhat later in higher altitudes. In Santa Cruz County, Cal., I found the birds only from about April 1st until the 1st week in October.

SOME MINOR TRIALS IN PREPARING EGGS.

By EUGENE S. ROLFE, Minnewakan, N. Dak.

THE inner film of membrane that the drill fails to cut away is one of the most annoying obstacles to satisfactory work—and the despair of every collector. The drill punctures simply—almost never cuts away; and upon being removed the edges of the membrane spring back into place and the film closes over the hole, preventing perfect drainage and precluding admission of air. The result in a few days is an offensive smell and often what is worse—a small mass of matter cakes and adheres to the inside of the shell.

This condition requires careful and patient work to remedy; for if the mass is dislodged it frequently leaves a dark stain on the membrane that, in the case of eggs with translucent shell, amounts to a positive blemish. If the embryo hook or any steel instrument is used and the adhering matter scraped loose, the result is inevitably a scratching and marring of the membrane which become apparent through the shell, and the egg is thus rendered second-class.

So, also, if fine shot is used in rinsing, the adhering mass may be, indeed, removed, yet a dark stain remains; and even this result is attained often at the expense of a broken shell, for the shot is heavy and the shell frail, particularly at the spot where the membrane is weakened by decomposition.

Dr. A. C. Murchison (Nidologist, ii, p. 128) recommends in drilling the use of a dentist's cone burr; he lets it cut clear in and then cut back again, and in this way gets rid of the flap of skin across the hole. I have not yet been able to adopt his suggestion, but it occurs to me that if this instrument will accomplish what is claimed for it, the sooner dealers in oölogical implements improve their drills to correspond, the better for us.

For want of such I have found it necessary after drilling to carefully cut away the film with some partially blunted instrument like the edge of an embryo-hook. In the case of large eggs with comparatively tough shell this can

generally be safely accomplished, and the membrane cut away so clean that it appears to have been done by the drill itself. Although such work leaves a perfect hole with clean-cut edges, yet it requires great patience and a steady hand. An unguarded movement will often chip the shell, and then the specimen is ruined.

In the cases of the small eggs with a fragile shell any trifling with this troublesome skin-flap is attended with still greater danger; yet a thoroughly satisfactory specimen never displays a ragged, untidy or gummy hole. I have seen eggs of hummingbirds, even, so nicely prepared in this respect that all trace of this film had been removed. In my own experience I have found no better way than careful, patient, almost breathless manipulation with tweezers.

Sometimes eggs when taken from the nest are

found to have the contents partially caked and adherent to one side. A noteworthy instance of this in my own experience occurred last summer when I took a set (?) of 25 eggs from the nest of a Redhead Duck, arranged in two distinct layers, the lower one of which—from lack of frequent turning, probably—gave much trouble in blowing from the condition above noted. In such cases a "solution" of fine shot with water and patient, careful shaking is probably the most effective way of dislodging the adhering substance, since no amount of soaking in water renders it soluble; but of course the obstinate stain remains. I have lately been informed that rinsing the egg at once with a solution of bicarbonate of soda will bleach the membrane when discolored, but I have not yet had an opportunity to verify this.

THE PINON JAY.

By N. R. CHRISTY, Rouse Junction, Colo.

THREE miles northeast from Rouse Junction, Colo., is a range of hills, a part of the Sangre de Cristo Mountains, that stretches to the Apishapa River, a distance of 14 miles. This range is from 7,500 to 8,500 feet high, very thickly timbered with pinon, yellow pine and cedar, and is the breeding place of a colony of about 150 pairs of Pinon Jays.

This bird is known throughout the state as the Colorado Blue Crow, and as "Pinonario" by the Mexicans of this section. They are resident here, but are seldom seen down in the valleys, except late in the fall, when they congregate in large flocks until about the middle of March, or first of April, according to the opening of spring, when they commence to pair. When in flocks they are very noisy, keeping up a constant chattering while feeding; but on pairing they become silent, and flit through the woods without a sound.

A little colony of about a dozen pairs on a small hill a mile west of Rouse Junction (altitude 7,000 feet), commence to nest early in April, and higher up they nest in May. I have found fresh eggs from April 5 to May 20, according to location. On April 1 of this year I found a nest containing 3 young fully half grown; this is the earliest date I have ever found either nest or eggs. On June 6 I found a nest with 4 eggs advanced in incubation; doubtless they were the second set of birds whose first set had been destroyed.

They nest from 6 to 25 feet up in either the pinon or yellow pine; I have never found a nest in any other kind of tree. The nest is generally fixed some distance from the body of the tree, in the crotch of a limb. It is very

neatly made of small twigs of pinon, yellow pine, or greasewood rootlets, shreds of bark, and occasionally wool, all woven into a compact mass, and lined with rootlets, bark and pine needles. All the nests I have seen are much alike in being plainly visible from the ground. The birds are very close sitters and will not leave the nest until you have almost climbed up to them; but then, what a racket they make as they fly off! They keep it up, too, until they bring all their friends and relatives around to see what is going on, and hear what a "hard luck" story they have to tell.

The eggs are from 3 to 5 in number, usually 4. I have found only 3 sets of 5 eggs, but quite a number of sets of 3 eggs. They range in shape from ovate to elliptical ovate. The ground color is bluish-white, covered all over with small specks of different shades of brown, thickest at the large end. Occasionally the spots are large and blotchy. Those I have collected average in measurement: 1.18 x 0.86 inches.

These birds nest in colonies of from a dozen to 150 pairs, and the territory occupied by a colony is from one-half to three-quarters of a mile in length by a quarter of a mile in width; and they generally nest either on or near the top of a ridge.

But one brood is raised annually, and the young are big enough to fly by the 25th of June or 1st of July. They commence to flock at once, and about the middle of October descend to the valleys, where they are a great annoyance to the farmers who have fields of corn. It is frequently necessary to cut the corn before it is ripe in order to save it.

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Vol. III.

DECEMBER, 1898.

No. 4.

Editorial Eyrie.

Modesty being a virtue with which we have been afflicted from our tenderest years, we have been put to the editorial blush by the plaudits which our last number has evoked from our enthusiastic friends. We withstand the shock with philosophical resignation, however, and utilize our emotions as a stimulus to renewed endeavor to please our rapidly enlarging circle of subscribers and contributors. Yet it remains less to our credit than to our contributors' that THE OSPREY appears in such fine plumes. The editorial function is a humble one in comparison with that of the writers for a first class illustrated monthly magazine of popular ornithology, such as ours is universally conceded to be. THE OSPREY is already sufficiently attractive, entertaining and instructive; our aim shall always be to make it *indispensable*. "As well be out of the bird-world altogether as out of THE OSPREY" writes one of our friends; and this sentiment expresses the height of our ambition already realized to some extent, and, we hope, to be perfectly realized in the near future.

We do not profess to be very "technical" in THE OSPREY. Technicality, and nomenclature, and classification, and synonymy, and all that

sort of thing, are well enough in their way, but are not in our way. Yet we are not less "scientific" for being popular and pleasing. What is science? It is nothing more than accurate information employed with precision, and information is neither less accurate nor less precise for being conveyed in plain easy terms. We know that this is what our subscribers desire, and shall feel confident of our ability to meet their wants, if they will themselves contribute to the desired result.

So we say, *send in your contributions*. If with good illustrations, so much the better. Make them fresh, bright, crisp—and not too long. We can always find a place for a short article, if it is a good one; a long one may have to await its turn in the make-up. We wish especially to keep our "Pigeon Holes" full of interesting new finds and facts in bird-life. Send your notes of all such; and most likely you will read them in the next number of THE OSPREY. One other point: please write only on one side of the paper, and write legibly, especially in cases of all proper names. Editors may know a good deal, and be good guessers, but they are not omniscient, and not gifted with the faculty of second sight, to read your mind and discover what it was that you meant to write but forgot to put on paper.

We promised a Fuertes plate for this number, and were going to beg pardon for its non-appearance, when it reached us barely on time. We have several of these beautiful illustrations in hand. So look out for the January number. We have plenty of good things with which to greet you and wish you a happy new year.

Parable of the Clever Kid and his Aged Sire.

"My son," said the Aged Ornithologist, with one foot in the grave and the other almost there, "can you spell the name of that genus whose type is the Bay-winged Bunting?"

"Course I can," replied the Clever Kid—"P o-o-e-e-t-e-s."

"Tis well; and how do you spell the name of that genus which contains the White-fronted Dove?"

"Same way Thompson spells his name—with a p-L-e-p-t-o p-t-i-l-a."

"Now Heaven be praised," said the Aged Ornithologist, while tears of joy coursed down his furrowed cheek; "the Clever Kid can spell better than a majority of the members of the Committee on Nomenclature and Classification of the American Ornithologists' Union."

[To be continued.]

Letter Box.

PROTECTIVE
COLORATION.

MILWAUKEE, WIS.,

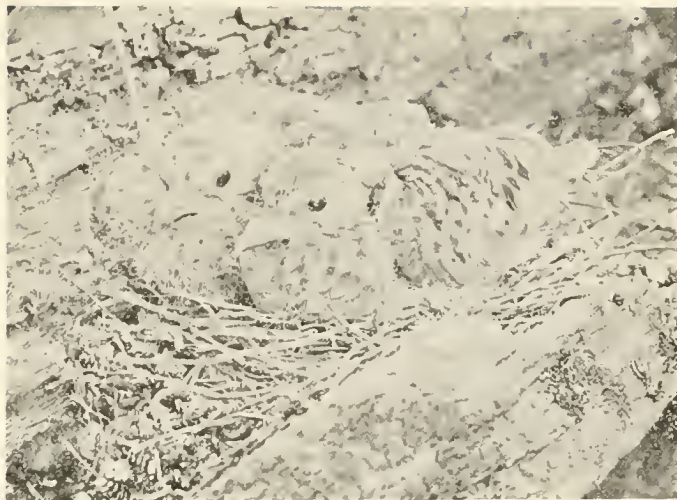
July 3, 1898.

TO THE EDITOR:

Perhaps you will not consider the enclosed photograph of a pair of young Mourning Doves (*Zenaidura macrura*) unworthy of reproduction in THE OSPREY. I regard it as a remarkable example of protective coloration. It will be seen how closely the squabs in the nest are assimilated with their immediate surroundings.

Very Truly Yours,

JNO. A. BRANDON.



Protective Coloration.

A SAMPLE.

NEW LONDON, O., April 29.

EDITOR OF THE OSPREY

Please find enclosed an article

Is it what you desire, and willing to publish? I may write more and desire to know more accurately what is wanted. I desire your criticisms, I won't be imposed upon if I know it and won't impose on anyone else if I know it so if my articles are not up to your ideas, I want to know it, I am very much like a character in "Scene from a Poor Gentleman." I hate flattery. I don't want an unmerited article pub-

lished because I wrote it. I think you understand me so you will oblige me with honest opinions and not offend by plain speaking. I may send more articles. If my time permits and articles suit I should like to make some arrangement by which I could have one in every OSPREY. Truly,

E. E. MASTERMAN.

Our correspondent need not fear flattery from us, and we cannot make any "arrangement" by which he can have an article "in every OSPREY."—EDS.

Pigeon Holes.

NEST AND EGGS OF THE BLACK-HEADED GROSBEAK.—This bird is a common summer resident of Santa Clara County, California, especially along shady streams in the valley and near water-courses in the hills. The loud, cheery song of the male may be heard throughout the day in his favorite haunts. In the valley the nests are almost always placed in the fork of a willow, either at the top or near the end of a limb, not often above 20 feet from the ground. In the hills, buckeyes and oaks seem to be preferred as nesting sites, the structure being placed near the end of a long slender branch. The nests are so flimsy that the eggs may be seen from below. Two of them before me are typical. The smaller one has a foundation of a few slender weed-stalks, some of them eight or nine inches long, on which is the nest proper, composed of fine dry grass and lined with rootlets. The dimensions are 4.50 outside and 2.75 inside diameter, with 0.75 depression. The other nest is similar, but it is lined with the small ends of long narrow weed stalks; outside diameter 5.50, inside 3.00, depth 1.00. The eggs are usually three or four in number. I have taken one set of five, but know of no other case of finding this number. The varia-

tion in size and shape is shown by the following measurements:

Set of 2, May 19, 1.02 x 0.76, 1.00 x 0.75.

Set of 3, June 14, 1.06 x 0.72, 1.08 x 0.70, 1.06 x 0.70.

Set of 4, May 26, 1.06 x 0.66, 0.97 x 0.66, 0.94 x 0.64, 0.95 x 0.66.

Set of 5, May 6, 1.61 x 0.74, 1.05 x 0.74, 1.05 x 0.72, 0.98 x 0.73, 1.01 x 0.68.

The average measurement of 35 eggs is .98 x .69. The ground color is greenish-blue, fading to a lighter blue after the egg is blown. The markings are spots and blotches of reddish and dark brown, with frequent underlying spots of lavender and gray; they are always most numerous at the larger end of the egg. One specimen out of 24 in my cabinet is finely dotted with spots varying from the size of a pin's head to mere points; all the others are as just described.

The birds nest mostly in May, and both sexes incubate. The male is more easily flushed from the nest than the female. When disturbed he immediately calls for his better half, and perches at a little distance to watch proceedings till he thinks his assistance is needed.—R. H. BECK, *Berryessa, Cal.*

GOLDEN EAGLE IN THE BERKSHIRE HILLS.—One of these magnificent birds was captured in the Berkshires near Hancock, Mass., about



Captive Golden Eagle.

November 15th. It was caught in a fox trap by a local hunter, and is now in captivity at this village. — BENJAMIN HOAG, *Stephentown, N. Y.*, Dec. 30th, 1897.

NESTING OF THE ANHINGA IN LEON COUNTY, FLORIDA.—The Anhinga, commonly called Snake Bird and Water Turkey, is quite abundant in this county. About 3½ miles west of Tallahassee lies a small cypress swamp, the trees of which are quite small in comparison with the immense ones found in some other swamps of Leon County. The water is shallow, only about 5½ feet in the deepest parts, so that wading is comparatively easy. The water, furthermore, is so clear that the bottom is easily seen. The main obstacles to rapid progress are the numerous logs which lie on the bottom, and are likely to trip up the collector if he is not careful. But this is offset by the easy climbing of the small trees.

My first visit to this swamp was in April, 1893. There being no boat or other means of reaching the heronry, a few rods beyond, I procured a stick and waded in. Not far from shore I found a huge nest, not more than 12 feet up, and of course I climbed the tree to investigate. There were three half-fledged Ward's Herons in this nest. On my way down the tree I noticed a rude structure, placed on the extreme end of a limb, and saw that it contained three white eggs. These I pocketed, not knowing at the time what they were. On arriving at home, I went to my cabinet, and on comparing the eggs with one I had purchased, I found that they were those of the Anhinga. About 19 days later I returned to the swamp and procured another set of three, in the same nest I had found before, together with a third set of four. Next year I took from the same swamp two sets of three eggs, two of four, and two of five, one of the latter containing the largest Anhinga eggs I have ever seen. I thought at first they were

Wood Ibis. In 1895, I again took several sets, of three, four, and five. Next spring my Anhinga colony was less productive, as I only found three sets, respectively of two, four, and five eggs.

The nests are composed of sticks, moss, and trash, lined with cypress needles. Some are quite shallow, others much deeper. They are generally placed at the extreme end of a limb, and thus are difficult to reach, although they usually are not over 12 feet from the ground. I am satisfied that if robbed the birds lay again in the same nest or in one near by; and also that they use old nests year after year if not molested. The usual complement is three, but often four, sometimes five. In one instance, a second set taken from the same nest contained more eggs than the first one. The period of nesting ranges from the 1st of April to the latter part of June; but of course, when the date is so late as June, the birds have been robbed of earlier eggs. Anhingas have nested in this same swamp for many years, but of late have been so much disturbed that they are fast leaving. It is a collector's paradise, in which, within a space of about five acres, I have found nests of Ward's, the Green, Snowy, Little Blue, and Louisiana Herons, Reddish Egret, Least Bittern, Purple and Florida Gallinules, and several species of land birds. Though I speak in this article of no other locality for the Anhinga, this bird also breeds in various other parts.—R. W. WILLIAMS, JR., *Valparaiso, Ind.*

NESTING OF THE CAROLINA WREN — HOW IT "PANED OUT."—The finest nest of this bird I have yet seen was in a battered wash-pan on the mantel in an old house used for storing machinery, where the pan had been used for holding water to pour on a grindstone. The nest completely filled the pan, was arched over



How the Nest "Paned Out."

and built of leaves, weed-stems, rootlets, grasses and a bunch of cotton twine—which shows plainly in the accompanying photograph—and lined with horse-hair. It contained five nearly fresh eggs which from the date (July 9, 1896) I knew must be of a second or third laying, as I had taken a fresh set of six eggs on April 15 of that year.—J. H. ARMFIELD, *Greensboro, N. C.*, Feb. 8, 1898.

EARLY NESTING OF THE PRAIRIE HORNED LARK.—On my way with a load of wood, on March 30, a Prairie Horned Lark flew up from in front of the horses, and alighted about three feet away. I noticed that it acted rather queer, and thought that it might have a nest near. So I got down from the wagon and after searching a few seconds I found the nest, which contained four young birds, about a week old. As this set of eggs must have been laid about March 9, it beats the record for New York State.—W. J. WIRT, *Gaines, N. Y.*

PENSILE REDSTART'S NEST.—I found this nest June 27, 1897, while strolling along the edge of a thick wood, about six miles up the east shore of Owasco Lake. It was built like a Red-eyed Vireo's, suspended between two twigs at the



Pensile Redstart's Nest.

end of a small limb, six feet from the ground. It was about 2.50 inches in diameter, cupped 2.00 x 1.50; made of leaves, grasses, rootlets and bark, covered on the outside with cobweb and plant down, lined with two or three feathers, grasses and hair.

The female allowed me to get within three feet of her, when she flew off, uncovering four blotched eggs, slightly incubated. She flew to the ground, calling her mate and acting as if she had an injured wing.

Have Redstart's nests like this one been found? May not this nest have been a Vireo's, afterward used by the Redstart?—GEO. C. EMBODY, *Auburn, N. Y.*

NESTING OF THE BLACK-THROATED BLUE WARBLER.—The breeding of this bird here is so rare that the discovery of a nest June 11, 1895, may interest readers of THE OSPREY. I was searching the ground for a nest of the Oven-bird, when I was attracted by the alarm notes of *Dendroica coerulescens*. A short search revealed the nest, which was built on a dry fallen limb resting in some small beech saplings. It was placed 18 inches above the ground, and was

composed of rotten wood, vine bark, and flowers from weeds, and partially covered with cocoons. The lining was small black roots and hair. The nest was within six feet of a hemlock limb where, in a previous season, I had discovered the nest and eggs of a Magnolia Warbler. The locality seemed to be a favorite one for Warblers, being an open tract in a piece of woods, on a side hill, grown up to bushes, ferns and saplings, with here and there a fallen log and brush pile. Unfortunately, one of the eggs was broken; the three remaining ones, which were slightly incubated, measure 0.63 x 0.52; 0.66 x 0.53; 0.62 x 0.50.—H. C. HIGGINS, *Cincinnati, N. Y.*

LARK SPARROW IN MISSISSIPPI.—On Sept. 3, 1897, I noted several Lark Sparrows (*Chondestes grammacus*), on the beach near Beauvoir, Harrison County, about 75 miles east of New Orleans. The birds were seen before a storm, feeding among the sparse grasses growing in the sand. One alighted on a wharf railing, and then flew down to the beach, where I shot it. When disturbed, the birds flew to a clump of trees and vines.

In Louisiana I have seen Lark Sparrows in the northeastern part of the State, in Madison parish; also I knew of their occurrence in the southern part of the State, on the west bank of the Mississippi.—H. H. KOPMAN, *New Orleans, Louisiana.*

THE FLORIDA BURROWING OWL.—This little creature cannot live at peace with the cowboy. The Owl would soon be extinct if the cowboy's efforts could bring about that result, for the latter destroys the former in every possible manner. The reason is obvious to one who knows the cowboy's work. Riding his pony at break-neck speed, it is only too often that the animal steps into an Owl's burrow, frequently breaking its leg or neck, if not injuring or killing its rider. One season, when on a trip to the haunts of the Burrowing Owl, I collected a number of sets of eggs. On my return to the same locality ten days later, I found that all the owners of despoiled nests had dug other and mostly deeper burrows. Once while lying in my tent my attention was drawn to a little cloud of dust in the air, apparently the scene of some agitation, a hundred feet away. My field-glass showed, much to my amusement, a little Owl scratching away with great alacrity, as if for dear life. I disliked to bother him, but examined his burrow next day, and found it peculiar—at least to me. Six inches from the bottom was a small side chamber, little more than a niche in the wall, containing one egg. I supposed the burrow would be dug deeper, and the egg rolled down when the nest was completed. At night one or more of the little Owls used to come close to my tent, and I was almost willing to lie awake to listen to their peculiar notes.—A. M. NICHOLSON, *Orlando, Fla.*

NESTING OF THE BLUE-WINGED WARBLER.—On the morning of May 10, 1897, while walking in Jefferson County, Mo., near Morse Mills, I saw two male Blue-winged Warblers chasing a female. In a few moments a male flew back and perching on a tree begun singing—a song

once heard not easy to forget or mistake. His mate joined him, and in a few seconds flew down to the road, hopping along till she suddenly begun tugging at something which proved to be a horse hair. This she appropriated, and flying over a rail fence dropped down in a small clump of weed stalks. There I found the nest, just receiving the finishing touches, about three inches off the ground. It was deeply cup-shaped, composed outwardly of oak leaves, next strips of grape-vine bark and coarse grasses, then a layer of fine grasses, and last a lining of horsehair. On passing two days later I found one egg had been laid; next day the nest contained this egg, with the addition of a Cowbird's egg, which I removed, fearing the Warbler might desert her nest. On the 14th the nest contained two eggs; 15th and 16th, 3; 17th and 18th, 4; 19th and 20th, 5. These I took, as the bird had been sitting several days. They were glossy white with a roseate tinge before being blown, lightly marked over the entire surface with minute specks of black, larger at the butt, where they formed spots; also there were some lavender spots on the large end, and on two of the eggs some lines and scrawls much like the markings on eggs of the Maryland Yellowthroat.

My second nest was taken five days afterward. I had been watching a pair of Prairie Warblers building, when I heard a male Bluewing singing. After hunting three days unsuccessfully, I was one afternoon passing about thirty yards from where I had been previously looking, when up jumped a Bluewing, ten feet ahead of me, and perched on a tall weed. After surveying me critically for a moment he hopped down to the foot of a small weed clump of about three stalks, 15 inches high. I made my way to the spot, and there was the nest. What a pretty sight Mrs. Bluewing made, with her bill, top of head, and sparkling eyes showing on one side, and her tail sticking up on the other! She remained on the nest for a minute, while my face was not three feet from her. Then leaving the nest with a flutter and a "chip, chip," she hopped slowly away near the ground, from twig to twig, and saw me despoil her nest of six beautiful fresh eggs! My third set was the second nesting of the same pair. The new nest must have been started immediately, as I found it two days later about 20 feet from the previous location. I nearly stepped on the nest, which was newly completed. Two days later it contained one egg and on the morning of the 24th I secured the set of 5 eggs, together with the nest and female. I hardly had the heart to shoot the poor bird, she seemed so tame and fearless,

but I needed her to make the identification doubly sure.—PHILO W. SMITH, JR., *St. Louis, Mo., June 8, 1897*



LOON SHOOTING.

Some years ago while looking for shore birds on a small lake near Kewanee, I found a Loon and put in several hours trying to get at him. I fired at least a dozen shots, but did not seem to hurt him at all, though he must have been hit. In the afternoon I returned, accompanied by a noted rifle shot, bound to have that Loon and test his diving powers.

My friend drove the Loon down the lake to me and I got two shots at about 30 yards, using heavy shot and plenty of powder in a Parker gun. We saw the water fly when the shot struck, and as he did not dive we knew I had hit him, though it had not injured him, so far as we could see. Mr. Bowen then began with the rifle, and finally cut the bird's neck nearly half way through. For all this, when I approached in a boat he was able to dive a distance. I used the shot gun again and seemed to cripple him, but had to kill him after I got him in the boat. Now this Loon never got under water till the shot struck, and no other Loon ever did in my opinion and in that of Mr. Bowen, unless it was far enough away to have time; and a rifle-ball will beat a Loon at 100 yards every time, if he does not see you before you shoot. I used 4 drs. of powder and 1½ oz. of No. 3 chilled shot, yet failed to put one through his skin, though I found many bruises where they had struck, when I skinned the bird later on. The matter stands like this: A shotgun will not kill a Loon except by chance, as he dives at the first move and is usually under water by the time the shot leaves the gun: But if you shoot at a Loon or Grebe when he is still and has not seen you, the shot will find him out. I have seen it tried on Grebes many a time, with a heavy rifle at about 200 yards, and the ball got there before the bird tried to go under.—DR. A. C. MURCHISON, *Toulon, Stark County, Ill., May 8, 1898.*

In the Osprey's Claws.

Eggs of Native Pennsylvania Birds: A World's Fair Collection.—By J. Warren Jacobs. Waynesburg, Pa. 1895. pp. 10; 2 plates and portrait of author.

This booklet is a list of the collection of birds' eggs of Pennsylvania exhibited at the World's Fair by Mr. Jacobs, acting under the State Ornithologist. The exhibition embraced in most cases a single set of nearly all of the birds known to breed in that state, and was no doubt

an interesting and creditable display. The list is badly printed, with many misspelled words, but this is by no means the most reprehensible feature of the publication. On the plates information is conveyed of bird murdering, under the guise of science, that merits the severest condemnation. Thus, on the first plate are shown eggs of the Whippoorwill "selected from a series of 25 sets" and eggs of the Red-tailed Hawk "selected from a series of 50 sets." The

second plate depicts eggs of various Warblers, and a number of nests and eggs of the Ruby-throated Hummingbird, the latter "selected from a series of 40 sets." What possible advance can there be to science for a single private student to possess 150 eggs of the Red-tailed Hawk or 40 sets of Hummingbird eggs? The great National Museum collection only embraces 29 eggs of the Ruby-throated Hummingbird, as it is well known that they are uniformly white and unspotted and of only very slight variation in size. The spirit that prompts an accumulation of a collection of the above mentioned magnitude can only be compared to that of the miser who gloats over his hoard. It is not science!

Accompanying this 'booklet' is a printed circular announcing the speedy publication of another 'booklet' that is to bear the pretentious title of "Gleanings From Nature No. 1. Abnormalities in the Ornithological Collection of J. Warren Jacobs." It is to be devoted to descriptions of an "interesting collection of abnormalities" including "runts, albinos and curiously shaped and marked eggs." Exchange is invited of "abnormalities" of this character, for which the collector will receive "full credit" as well as "two copies of the book free."

It is impossible to dissociate this 'fad,' for it is nothing else, from the regular dime museum and its accompanying list of freaks, such as double-headed chickens and the like.

The list is also accompanied by a newspaper clipping, "Spare the Hawks and Owls"—for the obvious purpose of enabling our enterprising student (!) to collect 50 more sets of these eggs.—F. H. K.

Catalogue of Birds in the British Museum.—Volume XXVI. London 1898. 8vo., pp. 1-xviii, 1-688; pl. 14.

This monumental work, one of the most extensive and important ever contributed to the literature of ornithology, is now brought to a successful close by the appearance of the twenty-sixth volume—the twenty-seventh having been published in 1895. The series was projected more than twenty-five years ago, and the first volume appeared in June, 1874. It was at first contemplated that Dr. R. Bowdler Sharpe should undertake the work; but this was soon seen to be beyond one-man power, and several other eminent ornithologists have contributed to the whole result. These are, in the order in which their assistance was rendered, Mr. Henry Seebohm, Dr. Hans Gadow, Mr. P. L. Sclater, Mr. Osbert Salvin, Mr. Ernst Hartert, Mr. W. R. Ogilvie-Grant, Mr. Edward Hargitt, Captain G. B. Shelley, Count T. Salvadovi, and Mr. Howard Saunders. Among these eleven authors Dr. Sharpe is conspicuous as the author of eleven of the volumes, treating of upward of 5,000 species, as against upward of 6,000 by all the other collaborators collectively. The total of species treated is given at 11,548.

This "Catalogue" is vastly more than its name implies; it is a formal systematic treatise on all birds known at the time of preparation of the successive volumes, being based not only on the immense collection in the British Mu-

seum, but also on all the specimens available in any public or private collection in the world. There were in the British Museum in 1872 about 35,000 specimens; the number is now nearly 400,000. Every specimen in hand at the time of writing has been catalogued, with the usual data. But such lists, given under the head of every species, are but a small part of the work. Each species is treated with a copious if not complete synonymy, almost exhaustive of the standard literature of the subject. The huge labor involved in this is only to be fully appreciated by those who have undergone it; in the cases of some well or long known species, the bibliographical references extend over several pages. Aside from the mere clerical labor involved, the sifting of synonymy in this prodigious mass of names required expert work of the highest technical character. Every recognized species is also fully described, as nearly as possible for both sexes and all ages. The geographical distribution is very fully given. The characters of the genera and higher groups are stated, often at some considerable length, with analyses of species under genera, genera under families, and families under orders. The whole work is thus classificatory as well as synonymic and descriptive. Very numerous wood cuts illustrate the text, besides which illustrations, 540 specimens, mostly types, are figured in colors upon 387 plates; and choice has been made of species previously unfigured. Having such character as this, the work is of course far and away the greatest exhibit of ornithology extant. It would be almost impertinent to praise it in general terms, for that goes without saying; and the present is of course no place to go into critical particulars.

The volume before us is the joint labor of Dr. Sharpe and Mr. Ogilvie-Grant. The former treats the Ibises, Spoonbills, Herons and Storks; the latter, the Cormorants, Gannets, Frigates, Tropic-birds, Pelicans, Loons, Grebes, Auks, and Penguins; and this work is accomplished in the masterly manner which is conspicuous in every volume of the series. It will interest readers of THE OSPREY and Auk to learn that, if the authors of this volume are right in every instance, some twenty changes are required in the nomenclature of North American species adopted by the American Ornithologists' Union. Some of these result from difference between American and British canons of nomenclature, such as taking Linnaeus at 1766 or at 1758; but others are matters of ornithological science, requiring our attention. It is needless to add that no British author follows our absurd rule of misspelling names, for no other reason than that they were spelled wrongly at first. This is a blot upon our Code which has done more than all its other imperfections combined to keep it from being generally adopted.

Sir William H. Flower's preface to the present volume, upon which we have drawn for some of our statements, announces a supplement to the Catalogue, probably in two volumes, to bring the contents of the earlier volumes fully up to date, and also a general index to the whole, to render the great mass of information it contains more readily accessible.—E. C.



THE BLUE JAY. BY LOUIS AGASSIZ FUERTES.



NESTS OF THE RIVOLI HUMMINGBIRD.

THE OSPREY.

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NOTES ON EUGENES FULGENS.

By F. C. WILLARD, Tombstone, Ariz.

AMONG many new acquaintances made during a season in the Huachuca mountains in southern Arizona, none proved more delightful than the Rivoli Hummingbird (*Eugenes fulgens*). I was introduced to this bird early one morning about June 25th, 1897, when a female was coming and going among some maples which lined Miller canyon. Later observations led me to believe that she was building at that time, but I failed to locate her nest.

June 28th found me looking at a supposed nest of the Western Wood Pewee about 40 feet high in a sycamore beside the little stream which flowed through Ramsay canyon. The nest was near the tip of a horizontal branch at the top of the tree, directly over a pool of water. A shower of sticks and stones failed to flush the bird; so strapping on my climbers, I started up. As I neared the branch, the sunlight glistening on the bird's back caused me to look closer; a second glance revealed a long beak, and enabled me to identify the bird. I hung on right where I was for a few moments until I got my breath, and then crawled out as far as I dared; still she did not leave her nest. Tying the limb up with a rope enabled me to get within seven or eight feet of the nest and by shaking the branch the bird was dislodged, only to resume her place a moment later. How to secure the eggs was a question solved by the use of a small net and a stick; one of the eggs was thrown out, however, by a sudden gust of wind. The bird interfered a good deal during this operation. I had to poke her to make her leave the nest; she constantly returned, trying to slide in under the net as it was tipped up on edge, finally settling right in the net as it lay on the nest, not seeming in the least disconcerted or discouraged by repeated failures. After the eggs were removed, she returned and rearranged some of the lining and lichens while the branch was being cut off.

The nest differs from all others of this species I have seen. It seems to be built on the remains of an old Western Wood Pewee's nest, but is itself composed chiefly of sycamore down. Thistle-like seeds and grass-tops are scattered over the outside, the whole being covered with lichens attached by a thick coating of spider's web. The nest measures 3.37 inches outside diameter, 1.25 inside; 1.75 outside depth, 0.87 inside. Incubation was well advanced.

The second nest was found July 2, by seeing

the tail of the bird projecting over the edge; it was 30 or 35 feet high in a moss-covered maple, on a bunch of the moss, well out toward the tip of a drooping branch, and was so perfectly concealed that, after flushing the bird the first time, I could not find the nest again until she returned to it. There was only one egg at this time, but on the 6th I secured the set of two. This nest, like the first, was directly over the water. It is typical of the species; composed of sycamore down, covered with lichens and a few pieces of grass tops intermingled; the whole held together with spider webs. The dimensions are, outside diameter, 2.25 inches, inside 1.12; outside depth, 1.25, inside 0.75. One egg was incubated several days; the other, just noticeably. The male came around while the eggs were being taken, but soon left.

Ascending the canyon a short distance, I saw a female Rivoli alight on a small branch at the extreme top of a slender maple. Nothing that denoted a nest could be seen; but, as she returned to the spot several times, I determined to keep an eye on the place. Returning the next day, what looked like the beginning of a nest could be seen; so I sat down to watch. The bird soon came with something in her bill which she stopped just a second to place in position, then flew off among the branches of a large pine near by. On her return I could see nothing in her beak, but she evidently had some spider web, for she laid something on one side of the nest and then, turning around, reached under the branch and took hold of it and pulled it under and up, fastening it in place by a stroking motion with the side of her bill. This work continued with great regularity during the hour spent in watching her, nearly every other trip seeming to be after spider web. Once a short stop for rest was made, and several expeditions against neighboring Wood Pewees or an inquisitive Jay relieved her labors. Just a week was required to build the nest and lay two eggs, and on July 13th this fresh set was taken. The nest was over 40 feet up, directly above the water. The male appeared on this occasion also, but did not remain. The female sat in a pine near by, now and then flying over and alighting near the nest, but she was too shy to remain long. In construction this nest is the same as the second one, but it has two small feathers laid on with the lichens.

Two or three days elapsed and I had given up

hope of taking more specimens, when one morning, July 17, as I rode up the trail, a Rivoli flew into a sycamore just ahead of me. Stopping to watch her for awhile, I was surprised to see her fly right over me, and I turned around just in time to see her settle on a nest in a small maple, 25 feet over the trail. Here was something different, as the other three nests and a deserted one had been all over water. An easy climb put me on a level with the nest and then the work began. Rope and net came in play again, as, indeed, they did with all four nests. While I was trying to get within reach the female made numerous dashes at me. She would fly from an oak a few rods distant, straight as an arrow right at my head, turning off and upward at a sharp angle when within two or three feet of me. I instinctively dodged several times, she came so close. During the last few feet of her flight the wings were held perfectly steady, not vibrating in the least until after she had turned. The humming of her wings was like that made by an immense beetle or a bumblebee, lacking the sharpness of that of small hummingbirds. Now and then she alighted on the

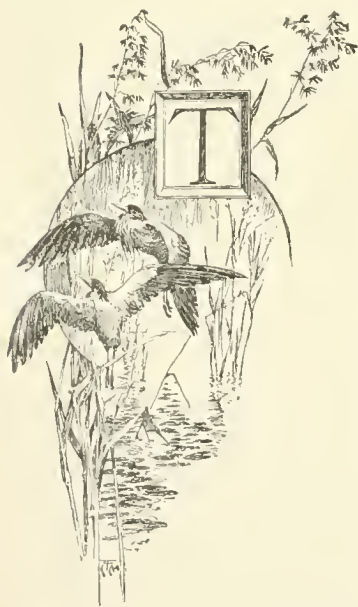
nest for a few moments. Incubation was well advanced. One of the eggs was covered with rusty spots which would not wash off, and appears in figure 4; the same thing was found in an egg of the Broad-tailed Hummingbird. The nest was saddled on the branch in a bunch of moss which covered the tree, and was typical in every respect.

I observed the birds from an altitude of about 5,000 feet up to the summit, which is somewhat over 9,000 feet. All the nests were found between 5,000 and 6,000 feet. Whether they nest above this I am unable to say. The male may often be seen near the top of some dead tree in a rather open place, catching insects after the manner of Flycatchers. He allows no trespassing on his territory by any bird whatsoever. Not more than one individual was anywhere seen at one time except at the summit, where four or five were often chasing one another through the pines.

The eggs measure as follows: set 1, 0.62×0.40 ; 2, 0.65×0.37 and 0.62×0.41 ; 3, 0.62×0.40 and 0.63×0.40 ; 4, 0.61×0.40 and 0.62×0.41 .

NESTING OF THE ALASKA BALD EAGLE.

By GEORGE G. CANTWELL, Juneau, Alaska.



WAS an early breakfast that morning of May 19th, at our cabin on the beach of Howkan Island, for we were making haste down the channel to catch the outgoing tide, and the canoe was in the current as the sun rose over the mountains. Stowing the "muckamuck" box and the dog in the bow, I unrolled the blankets and enjoyed

tallest tree. I had never climbed this and found the only way of reaching the nest, 100 feet up, was to climb a smaller tree near by and cross on a projecting limb. Alas for my efforts! the birds had not laid.

Five miles further we stopped at another island, but saw no birds about the nest. On reaching the tree I found a dead eagle at the bottom; some Indian had probably shot it from his canoe. The nest was easily reached, but as I expected—no eggs. This was discouraging. A breeze had sprung up meantime, and with hoisted sail good time was made in going behind an island where I had never been before. Rounding a point I discovered a new nest in a small spruce, and as the canoe sailed noiselessly near I noticed bits of down sticking to the edge of the nest—"good sign," I thought; and at the clap of the paddle on the water a white head and yellow bill loomed up against the sky over the nest. To tie the canoe and reach the tree took but a moment. The more I pounded the tree the closer she sat. I went up the tree without climbers, the bird remaining on the nest until I was within a few feet of it; then she flew rapidly across the bay and I saw her no more. In the nest were two splendid eggs, the first of the kind I ever collected; quite round, very small for the size of the bird, of a dirty bluish cast, with many surface specks and scratches, but no blotches or lines. The nest was small, about two feet across on top and three feet deep, composed of dead bleached limbs, lined with bark and moss, and almost flat on top.

Later on we found two more nests in immense trees. As a shot from the Martin failed to raise any birds I concluded not to climb them; but in the afternoon I found another nest far up a hillside in a tall, slanting tree—a very unusual location. As I could plainly see the bird on the nest, I made haste to the spot with

myself in the stern, now and then plying the paddle to keep the course. Our destination was among the islands that border the northwest of Dixon's Entrance, where on previous trips I had located many nests of the Alaska Bald Eagle; several of which I had climbed in February, March and April, when their nests were invariably empty, although the birds were always about—great white-headed fellows that eyed me sharply from the dead limbs above.

The first stop was made at Eagle Island, so named from a large nest so conspicuous in its

climbers and rifle. The tree was much bigger than it looked, without bark or limbs, and as smooth as a bald man's head. The first rap on the trunk disturbed the bird, which circled about screaming angrily and presently settled on a tree near by. I needed another Eagle, and soon had her plugged with cotton; then with climbers and strap I slowly worked my way up to the nest. It contained a set of two eggs.



A GOOD DAY FOR EAGLES.

The lower end of Dall Island was reached about six o'clock; we were then 20 miles from home, on the shore of the open sea. Here on the very point was a nest I had previously noted. "Signs were good" here also, as the

bird's white head could be seen, turned toward me as I came up. Landing some distance down the beach I started to get supper, but the desire to climb to the nest was too strong; so I dropped the fire-wood, and taking my rifle and climbers started for the point. The Eagle left the nest before I reached the tree, and in circling about with easy turns just above the trees, presented a tempting mark. Somewhat to my surprise I shot it through the body as it passed an opening in the branches. After the dog's excitement had cooled down his attention was drawn to something in the surf, and not a hundred yards off was a Pacific Loon, flapping its wings. Throwing another shell into the chamber I took a chance shot as the bird rode the top of a swell. This was another good one, for Bob brought the Loon to me, shot through the neck. If anything will make a man's blood tingle, it is success of any kind, and as I started up for the Eagle's nest, I keenly felt every pulse-beat. The ascent was easy, but I could only gain the top of the nest by tearing away some of the side; for it was an immense affair—probably the accumulation of years—five feet high and about four feet across the top. After safely packing in a box the two eggs it contained, I drew myself up into the nest itself, and from this novel perch thoroughly enjoyed the view spread out before me. To the north lay hundreds of little green islands in long chains; to the east, Prince of Wales Island appeared in dim outline across Dixon's Entrance, while on the entire south and west rolled by the great Pacific, where the red sun was sinking beneath the waves. Who would not be an Eagle on such an island—monarch of all he surveyed? A good hot supper of coffee, flaps, venison and potatoes disposed of, several pipes smoked, a romp taken with Bob on the sand, I rolled in my blankets on a bed of moss; but as sleep seemed out of the question, I fell to meditating on the scenes of the day. On every island or point that contained an Eagle's nest I had also found small colonies of Northwest Fish Crows breeding; in several instances nests of both species were in the same tree. The birds were apparently on friendly terms, sitting side by side on the same branch and feeding off the same salmon; but let a Raven or Gull attempt such familiarity, and there would be trouble at once. It also occurred to me that none of the many black, immature Eagles seemed to be breeding, and I am inclined to believe that they do not assume the responsibilities of raising a family until they have their mature plumage.

CAPTURE AND CAPTIVITY OF GREAT HORNED OWLS.

By M. A. CARRIKER, JR.

THE banks of the Missouri, in the southeastern part of Nebraska, are broken up into bluffs and hills, which rise from 50 to 300 feet above the rapid flowing river. They were formerly and are in some parts still covered with heavy timber, which gave refuge and abundant food to many large Hawks and Owls, such as the Barred, Great Horned, and Long-eared Owls, and Red-tailed and Cooper's Hawks. These still remain, though they are becoming fewer every year.

April 2, 1898, while hunting for nests of the Red-tailed Hawk in a sparsely settled district, I discovered a bulky nest about 40 feet from the ground in a large linden tree, growing in a deep ravine. It looked weather-beaten from beneath, but on climbing up the ravine I saw the head of an Owl resting on the edge of the nest. I climbed the tree, and when about 20 feet up, on the straight, branchless trunk, I was startled by the sound of swiftly flapping wings behind me. Before I could turn my

head something struck me between the shoulders with a force that almost tumbled me to the ground. By a great effort I kept my hold, and then saw my assailant was a Great Horned Owl, sailing away to the nearest tree, snapping his beak and making such a noise as only an angry Great Horned Owl is capable of. In a moment the mate darted at me from a different direction, and I had just time to throw my gloved hand before my face, when a claw pierced my glove and skin, tearing away a piece of both. After that it did not take me long to scramble up among the branches, where I was comparatively safe from attack.

On reaching the nest I found it contained three young, completely covered with gray down, the feathers showing through in some places. They were very pugnacious, and on my approach threw their heads and wings forward and snapped their beaks viciously. As I had no means of carrying such bundles of rage, I was compelled to leave them; but three days later I was there again provided with a stout sack to put them in. This time the Owls did not attack me so viciously as before. On reaching the nest I found but two young Owls, besides which there

were two large rats and the hind-quarters of a rabbit in it, and from the odor I presumed the birds must have dined on skunk not long before. After some hard work I succeeded in getting Owls, rats and rabbits into the sack. The former arrived at my home in excellent spirits; however, they refused to eat for some days, until I feared they would starve. But having placed one of them on my arm and held a piece of meat before its mouth, to my surprise the food was bolted so quickly that my fingers almost followed. I had solved the problem of feeding Owls. I continued to feed them in this manner until they grew so vicious that I could not handle them with safety. When approached they would jump at the intruder claws foremost, like a game-cock, with every feather on end and the wings spread forward. I fed them on rats, rabbits and squirrels; when these were not obtainable, on beef, which they seemed to relish. When I skinned one of them it was extremely fat, although for the last three weeks of its life it ate very little. They can subsist for a considerable time without food, and they drink little or no water.

HABITS OF THE BARN OWL IN CAPTIVITY.

By D. A. COHEN, Alameda, Cal. (Read before the Cooper Club, July 2, 1898.)

ON June 1, while exploring some rocks on a steep hillside, I saw a Barn Owl fly from under a large perpendicular cliff. Lashing a stout rope to a tree on the hill and flinging the loose end over the cliff, I slid down for about 15 feet to a ledge, where I obtained a foothold at the entrance to a cave. Four downy owlets hissed simultaneously at my approach, and scrambled to the furthestmost point of the cave. The cave was on the south side of the cliff and was quite light. Close to the wall, not over 5 feet from the entrance, were the eggshells that once held the owlets in embryo, and the nest cavity was a slight hollow in the sandy floor, made by the weight and movements of the parents. The cave was littered with about a bushel of pellets and a quantity of small bleached bones.

I judged the owlets were a month old. One of them had sprouting wing-feathers, and part of the frill surrounding the face. After placing two birds each in either side of my hunting coat and ascending the rope, I carried them for several miles over rough country to camp, where they were put in a grain sack and slung under the axle of the rig, and thus carried home. They were mute all this while, but on being placed in a box when I got home they kept hissing at hearing the least movement, quieting down only after considerable time. The loud hissing notes were prolonged for 10 or 15 seconds, and when all of them hissed at once it seemed like an engine blowing off steam.

Next day I fed them on some small birds I had skinned, but they refused to eat and fought me vigorously with their claws. The largest one was particularly vicious and has not yet become reconciled; it sought the furthestmost corner of the box, lay on its back, struck at my hand with its claws and almost stood on its head to obtain a longer reach. Never having

heard of an owlet that was not hungry, I concluded that their savage nature failed to realize my good intentions. So catching each one I opened their beaks and placed food in their mouths; it was readily swallowed. Though they did not beg for more, I fed them two more courses with the same result. Their diet consisted of scraps of raw meat with an occasional bird or gopher, and once an executed chicken-killing cat.

In about 10 days they had become more reconciled to captivity and swallowed food more readily. A week later they would reach for food, having learned to know me, but would immediately retreat at sight of another person. I could now put my finger into their mouths—they would nibble at it a little and then stop, having found it was not meant to eat. By this time the two larger birds were gradually feathering, much down being retained on each feather. The wing-feathers and frills about the face were now well grown out. The other two birds, though of different sizes, were considerably smaller, due to difference in age. The smallest one was always peevish, uttering a note between a screech and a hiss, about every two seconds for half an hour at times. This little fellow began to grow weaker up to June 27, when it could not stand; so I put it out of misery. It had hardly grown a bit since taken from the nest, and had been backward in feathering.

The others seemed dissatisfied with a diet of butcher-shop scraps, and a few English Sparrows and squabs were eaten with avidity. I chopped the food fine, as the Owls showed hardly any inclination to tear it up for themselves; but latterly they took the birds given them, standing upon them, pulling them to pieces, and swallowing even the feathers.

From what I had read I supposed an Owl swal-

lowed its food with up-poised head, but such seems to be not the case, for my Owls held their heads downward and swallowed food upward with short jerks of the head. They threw up no pellets from eating meat, but pellets were found from bones, hair and feathers. One pellet contained several grains of whole corn that had been swallowed with the crop of a squab. Thus it appears that corn has no nutriment for owls.

The stomach of an Owl seems to be almost under the tail, as I ascertained by picking up

a hungry owlet to feed it; the spot that had been loose and flabby became tight as a drum after the bird had dined. When gorged they settled down with indrawn necks and eyes more or less closed. I fed them only once a day, at dusk, owing to the difficulty of handling them in daylight. After 3 weeks or a month they learned their feeding time, would begin to call, and shuffle up to me when I lifted the coop. I tried to give them water in a teaspoon, but they did not relish it, and I have kept them without water.

HABITS OF YOUNG SHORT EARED OWLS.

By LUDWIG KOMLIEN.

ON May 29, 1898, in company with Mr. Edward Hollister of Delavan, Wis., I found a nest of this Owl in a large marsh in Walworth Co., Wis. It was on wet ground in tall grass and weeds near a willow-fringed ditch, 30 rods from the edge of a marsh. The

which, when dried, swelled up more than six inches thick. I picked out over 600 feathers, and the following species could be identified, though I did not go to the bottom of the mass, as this was mouldy and the feathers were not easily identified. It is a rather bad showing,



YOUNG SHORT-EARED OWLS.

female (?) was flushed directly under foot, but did not again come within gunshot; the male (?) was hovering about the place before the nest was discovered, sailing high like a Hawk and uttering at intervals a cry similar to that of Cooper's Hawk.

The nest contained three young, of different sizes, probably 10 to 14 days old, covered with fine soft white down. They were as carefully photographed as the weather would allow on a cloudy, drizzling day. The nest proper was a composite mass of wing and tail feathers of small birds interlaced with wet matted grass

and to me entirely unexpected, as I have always looked upon this Owl as pre-eminently a mouse feeder. Baltimore Oriole, Cat Bird, Thrush, Brown Thrasher, Vireo, Wren, Scarlet Tanager, Red-winged Blackbird, Bobolink, *Shrike* (one nearly entire tail) Ovenbird, Yellow Warbler, Maryland Yellow-throat, Redstart, Cuckoo, Kinglet (2 tails), Sora Rail, Yellow Rail, Spotted Sandpiper, Killdeer, nine or ten species of Sparrows, Dickcissel, *Whippoorwill* (at least 2); Bluebird, Rose-breasted Grosbeak, Meadow Lark, Towhee Bunting, two species of small Flycatchers; and among a large number of tail and wing

feathers of warblers I could identify the Magnolia, Blackburnian, Black-throated Blue and *Cerulean*, but there were at least 8 or 10 other species.

I found no trace of a mammal either in the nest material or in the pellets. I took the young Owls home and kept them for over two weeks, but they developed such voracious appetites that I could not spare time to shoot English Sparrows enough for them. They were never tame—chasing one about the room continually or climbing up one's trouser leg, Woodpecker fashion. They seemed to enjoy playing on the floor with my little boys, or crawling over my water spaniel and nestling down beside him. Unless gorged with food they continually make

a whistling, hissing noise, like escaping steam, during the daytime; at night they were always quiet, even in a strong light. Nine Sparrows a day for the three was the least number they could get along with, but it required 12 or 15 to satisfy them. Once they ate 19 sparrows and the skinned bodies of 2 warblers in one day. The marsh where they were found is extensive, and there is no lack of mice—in fact, small rodents are very plenty; so it is no doubt from choice that the young were fed on birds. The locality was one of the very best for securing small migrating birds, as they would naturally follow the willow-fringed ditches rather than fly across an open treeless marsh 2 or 3 miles.

A VISIT TO PELICAN ISLAND, ON INDIAN RIVER, FLORIDA.

By L. W. BROWNALL, Nyack-on-Hudson, N. Y.

I WAS spending the spring of 1894 in Enterprise, a small collection of houses on St. John's River, Florida, and as I wished to lay in a supply of Pelican eggs, I concluded to take a short trip to Indian River and down to Pelican Island, about which I had heard a good deal. Leaving Enterprise on April 14, I went about 35 miles to Titusville, the largest town on Indian River, and there hired a boatman with a large, comfortable, flat-bottomed "sharpie," about the only style of boat that can sail in that very shallow water. Bright and early next morning we started for the rookery, about 65 miles down the river; it took us two days and a half to get there, as we had to beat against head winds most of the way, but about noon of the 17th we arrived at our destination.

Pelican Island is situated in what is known as the Indian River Narrows, and does not exceed an acre in size; it is absolutely barren, except a sparse growth of long rank grass. Undoubtedly trees have been on it at some time, as a few dead stumps are still standing; but they have all been killed by the excrement of the birds. One can smell the obnoxious odor at least half a mile if the wind is in the right direction, and on the island it is simply stifling. The birds nest principally at one end of the island, but a few scatter all over the place. The nests are built mostly on the ground, a few in the stunted apologies for trees before mentioned. So close together are they placed that often two nests merge into one; they are composed entirely of sticks with a lining of straw, and are sometimes two feet in height, evidently having been used for a number of seasons. Some of the birds are so lazy that they do not attempt to build a nest, but lay their eggs on the bare ground.

As we approached the island the birds rose in a dense mass, over a thousand, I should think at a rough estimate, making a noise nearly as loud as thunder with their wings; but our advent did not seem to create a very great disturbance, as they only flew about a hundred yards and then settled upon the water to watch proceedings.

Nearly every nest contained either eggs or young, the former in every stage of incubation and the latter at every age; and there were some young of the year among the old birds. On approaching them too closely, they try to

frighten one away by hissing and snapping viciously with the beak. When they are first hatched, and until they are some days old, they are without a feather, and in that condition not a thing of beauty; I think that the Pelican is the ugliest and most awkward bird we have. The young are exceedingly voracious; they will take a fish nearly as large as themselves and attempt to swallow it whole, often without success, however. They frequently sit with their beak pointing straight up toward heaven, with the tail of a fish protruding from it, and in that position they remain until the head of the fish is sufficiently digested to allow the rest of it to go down.

My boatman started in to see how many eggs he could collect in a short time, and began to fill a basket irrespective of "sets;" but I soon put a stop to that, and sent him back to the boat to cook dinner while I was collecting. The birds did not attempt to disturb me in this operation, apparently caring little or nothing what became of their eggs, for which I was very thankful, as one could do nothing against their concerted attack. In about an hour I had collected all I could conveniently handle, about 125 sets. So I returned to the boat to find dinner nearly ready, but as the stench was too overpowering to think of anything to eat there, let alone eating it, we weighed anchor and got away as quickly as possible.

The number of eggs in a nest ranged all the way from one to eight and nine, but as I found three or four to be the typical clutch, I concluded that those containing large numbers were owned conjunctively by two birds. There were, however, a number of nests with only one incubated egg, or with one lone chick, and there were many instances of the carelessness of the old birds in kicking the eggs and even the young out of the nest—in the latter case allowing them to starve. I saw no case such as I have read about, of full fledged young and fresh eggs occupying the same nest; but there were several nests containing young of very different ages—as much as two or three weeks difference in some cases.

On retiring that night I found that two of the eggs had developed extraordinary musical powers; but not being fond of that kind of music, especially at a time when I was struggling to court Morpheus successfully, I arose and ejected

the offenders. It was quite a novelty to hear a bird peeping so loudly inside a perfectly sound shell as to be plainly heard at a distance.

A Pelican is a very clumsy and at the same time a most graceful bird. I have seen a dozen or so flying in a perfectly straight line, one behind the other, keeping the same distance apart, and so close to the surface of the water as to necessitate their rising and falling with the swells, yet never so much as wetting the tips of their wings. I thought I had never seen anything quite so graceful. But when they dive for a fish they do so in the most awkward and

ungainly manner, dropping from the air, oftentimes turning a complete somersault in the descent; yet they seldom miss the fish, though I have often wondered how they caught any, they make such a fuss over it.

I have visited numerous rookeries in Florida, but, with the exception of one other, visited at Cape Sable, the one I have been telling about was larger than any of them. The exception was a rookery of Louisiana Herons, American Egrets and Roseate Spoonbills, and a very interesting time I had in it—in fact, I enjoy collecting in Florida more than anywhere else.

NESTING OF THE BLACK-AND WHITE WARBLER.

By J. WARREN JACOBS, Waynesboro, Pa.

ALTHOUGH quite numerous here during migration, the Black-and-white Warbler (*Mniotilta varia*) is somewhat locally distributed during the breeding season. I have always found them to be very partial to mixed timber on the hillsides, and secluded woodland cut up by numerous ravines whose steep sides are littered with leaves of the previous year. In such places the nest is to be found, sunken in the soft dirt or in a drift of leaves, and nearly always sheltered by a fallen branch, twig or the base of a small sapling. Sometimes it is sunken in the base of a bank of leaves which have lodged against a twig or small sprout.

The materials used in the construction of the nest seem to vary but little outwardly. Dry crumpled leaves—many of which are skeletonized—form the outer walls, which are inlaid with abundance of grass, weed fiber and tendrils, and occasionally bark-strips. This is more or less heavily lined with horse and cow hair.

On May 7, 1896, I was cautiously wending my way up the tortuous course of a rocky brook in quest of a nest of the Louisiana Water Thrush (*Siturus motacilla*), when I was attracted by the weak insect-like alarm notes of a pair of Black-and-white Warblers, issuing from the undergrowth, a short distance up an arm of the ravine to my left. Knowing, by past experience, that such anxiety on the part of the old birds betrayed the close proximity of their nest, I seated myself where I could watch their movements. After fifteen or twenty minutes they became reconciled to my presence, and flitted about from tree to tree, feeding in an unconcerned manner, but all this while emitting their weak notes. Now had it been a week or ten days later, these actions would have prompted me to set about at once searching for a nest of eggs, but at such an early date I felt sure their nest could not yet be completed. But after watching their actions for some time I concluded their duties of nest building were probably over, and I began a careful search for the nest, which I soon found sunken in the base of a lodgement of leaves, eight feet above the bed of the brook. It contained one egg, which I left, hoping to obtain a full set. On the 15th I went to take the nest and set, which now consisted of four of the most beautiful eggs of this species I have ever seen, and one of the Cowbird (*Molothrus ater*). One of the Warbler's eggs was slightly nicked, and its contents proved to be added.

Incubation in the other eggs was only slightly advanced. These eggs are white with a perceptible creamy tint, marked with hazel, vinaceous-rufous and rich heliotrope purple, chiefly on the larger end, where, on one, a distinct wreath is seen. The majority of the markings are small dots and minute specks, but large showy blotches are also quite numerous; some of which measure over 0.15 inch diameter—one reaching 0.26 x 0.12 inch. The eggs are ovate in shape and measure: 0.68 x 0.53; 0.66 x 0.52; 0.66 x 0.53, and 0.66 x 0.54 inch.

The nest was composed of leaves and lined with tendrils and horse hair, and measured outwardly: 4.5 in diam. by 2.8 inches deep, and on the inside, 2.9 in diam. by 1.5 inches deep.

Within a few yards of the present site, I found on June 7, 1894, a nest of this species containing a large young Cowbird and two eggs of the Warbler in which incubation had started. The embryo partly formed, then died and was drying up in the small part of shell. I placed my hand in the nest to remove the eggs and as I did so the young Cowbird fluttered out and tumbled to the bottom of the ravine chirping loudly. This brought the old birds on the scene, and for a short time the little ravine rang with their incessant chirping. Each old bird carried food; one had a small whitish grub, the other a small green worm. So anxious were they for the welfare of the parasitic offspring, when I picked up the little rascal to place back into the nest, they fluttered down upon the ground, and feigning lameness, came within a foot of my hand, dragging their little outstretched wings along in a most distressing manner. In this manner one fluttered underneath the body and around the legs of my dog, who, had he not been a tried veteran in the service of his master, doubtless would have made short work of the little bird.

Four eggs of this species, now before me, exhibit considerable variations, chiefly in point of markings and their distribution, the prevailing type being moderately marked, chiefly on the larger end, where a more or less well-

A series of eggs of this species, now before me, exhibit considerable variations, chiefly in point of markings and their distribution, the prevailing type being moderately marked, chiefly on the larger end, where a more or less well-

defined wreath is discernable. The set taken May 15, 1896, and described above, is one of the more heavily marked sets. The most lightly marked set of the series is speckled all over with minute dottings of hazel, vinaceous-cinna-

mon and faint heliotrope purple. The ground color throughout is white or creamy tinted. Twenty-seven eggs in the series average: 0.67 x 0.53 inch.

A PET CROW.

By C. F. STONE, Branchport, Pa.

It was on the 1st of June, 1894, that I made Tom's acquaintance by poking him out of his nest with a ten-foot stick, for the nest was far out on a horizontal limb about 60 feet high. He dropped into a basket fastened to another stick, his one set of claws clutching a large portion of the nest lining and the other grasping the leg of his sister, who, after vain efforts to stay in the nest, finally toppled over into the basket alongside of Tom. But it is of Tom that I wish to tell you, for he was the more intelligent of the two.

During the first few weeks he would follow me about when hungry, squawking as only a young Crow can squawk, at the rate of about sixty squawks per minute; and when I filled him so full of worms that he could scarcely close his mouth it would be only ten minutes before he would squawk for more.

As he grew older he would eat anything from the table except sour preserves, and after meals he usually picked up small bits of gravel, glass, cinders, or sand.

Tom was an expert at catching mice, capturing them with the dexterity of a cat and holding them with his claws while he tore them into small pieces and ate them, skin, bones and all, with great relish. Crows are said to kill chickens sometimes. I never saw Tom kill but one, and that a weakling which I was trying to save. One day the chick got out of its box and Tom began to examine it from all sides, walking around it several times in a gingerly manner, turning his head from one side to the other, his eyes sparkling like black diamonds. Finally concluding that it must be something good to eat he knocked it senseless at one blow and flew away with it into the willows, where he tore it into shreds, eating, however, but a small portion. When feeding him I usually stood away fifteen or twenty feet and tossed the food to him, which he caught in his bill with wonderful deftness. He would catch any small article in a like manner.

Tom was a great mimic, and could cackle just like an old hen. He could mimic a person's laugh to perfection, but the only words that he ever could articulate clearly were "hello!" and "go off." Whenever I greeted him with "Hello Tom," he would reply in a drawling comical tone, "Hello, huh, huh, huh, huh," thus ending with some words of Crow jargon, and meanwhile going through the most ridiculous contortions. I taught him to say "go off" by repeating it to him many times and shaking a eat at him in order to set his tongue in motion—and it always had that effect.

I soon learned to understand some of Tom's crow talk. Whenever he uttered a long drawn, low toned "ah," it was a sure sign that a

strange dog or cat was coming, and if the animal came too near he would break forth into a series of "caws" and hustle for the highest perch that he could find. A short, quickly uttered "uh" meant that he was hungry; while a ringing loud "uh, uh, uh," always three times with an interval of a few seconds, meant that Tom was happy.

During dark cloudy days in winter he had a habit of getting onto the highest perch that he could find in the engine room where I kept him, and keeping perfectly quiet; but as the weather cleared Tom would say "uh, uh, uh" and come down to get into all sorts of mischief. Among his many pranks was pulling pins from clothes lines, which caper caused a woman to clip his wings. He never stole the pins, but merely went the length of the line, pulled the pins out, and tossed them over his shoulder.

One evening I was setting out cabbage plants in my garden, and after putting in a row of 30 plants I arose from my knees and turned around to see if they were in straight. "What! you black imp, get out of this!" There lay every plant but three or four, for Tom had followed close upon my heels and yanked them out. So still was he that I did not suspect what he was about. He always kept mighty quiet when in mischief. He was fond of playthings, and he spent many happy hours playing with an old cob pipe, which he was careful to hide when tired of it by covering it with a lot of sticks, stones or other rubbish. He did the same with his food when he had too much, but would dig it out bye and bye and eat it.

Tom liked to have me scratch his head, and showed his appreciation by slyly stealing a pencil or cigar from my vest pocket and flying away before I could prevent him. After Tom's wings were clipped he always came to me when ready to go to roost, begging me to lower my hand that he might hop onto it and be raised high enough to jump to his perch. He could not settle down at once, but would wipe his bill the whole length of the perch first. He enjoyed a pan of water into which he would plunge, no matter how cold the water. Tom's "bump of curiosity" was well developed, for he was always prying into boxes and scattering their contents. He could pull corks out of bottles almost as easily as a corkscrew, and thereby hangs the story of Tom's end. One day he pulled the cork out of a vial containing oil of smoke and swallowed a drop or so. For three days Tom kept his perch, refusing all food or water; not a caw or hello would he say. On the morning of the fourth I found him under his perch; his spirit had gone to the happy hunting grounds where crows do not have to spend half their time in trying to save their skins.

MY ROOKERY.

By A. M. NICHOLSON, Orlando, Fla.



LAST May I went on a fishing trip about 40 miles from Orlando, and knowing that birds nested there every year, I prepared cages and took an extra team to bring some of them back with me for a rookery which I had arranged for them. When my party came to the lake we found many birds, mostly Wood Ibises, but also Cormorants, Anhingas, Ospreys, and a few Great Blue Herons. On the evening of the fourth day I gathered a number of young birds, which were quite large enough to rear by hand, and next morning I started away with 14 Wood Ibises, 7 Anhingas, and 3 Cormorants. We were a full day on the road, and it was very warm, but the cages being made of mesh wire and covered with bushes to shade the birds, they stood the trip well; I only lost one, that was trampled to death by the older birds. It was no trouble to teach them to eat. I made a large trough and kept it running full of fresh water. After cutting the fish or beef

up into small pieces, which the birds could swallow easily, I threw it to them, and also some into the trough. They soon learned their lesson, and no sooner did I rub my butcher knife on a whetstone than all their heads were up. The most interesting bird of the lot was one of the Cormorants. As soon as I approached he would come to me as hard as he could pitch, with both wings raised, bowing at every step, and I would toss the bits of meat to him; he would catch them like a dog, seldom missing a peice. They all grew to be beautiful specimens, the Ibises especially, snow-white with bronze-green primaries. I forwarded to the National Zoological Gardens 2 pairs of Wood Ibises, an Anhinga, and my pet Cormorant. I have had a great deal of amusement out of these pets, they are interesting to watch, and comical sometimes, as they bow to each other and keep up a continual "cah! cah! cah!" for some minutes, as if in conversation, telling of having been stolen from their parents and taken into a city, where they could not wade in the marsh to catch crawfish, snakes, and young alligators.

NESTING OF LE CONTE'S SPARROW.

By G. F. DIPPIE, Toronto, Ont.

DURING the summer of 1896, I again had the good fortune to take an authenticated nest and 5 eggs of this rare bird, securing the female as she left the nest. My first acquaintance with the species the past season, was on June 8, when exploring a small lake about 4 miles northwest of Red Deer, Alberta, Canada. I came upon several birds, which by their restless actions were undoubtedly nesting, in a section of "bay marsh" a few hundred yards in circumference in a corner of the lake. I spent an hour or more in vain search, and before leaving the locality shot a specimen as it clung to a tall weed keeping up a continuous "chip, chip;" it proved to be an adult male *Ammodramus lecontei*.

Again, on June 14, when in camp at Burnt Lake (previously called Swan Lake), I discovered several pairs inhabiting another long narrow strip of marsh. I spent most of the day in careful search, but with no success. After supper as evening was coming on and the mosquitoes were commencing to bite, I wandered over to my "sparrow strip," and whilst carefully quartering the ground, spied lying on the damp earth between two tufts of grass a small egg which I carefully picked up. It proved to be perfectly fresh; when compared with the other 5 it appeared to belong to the same species.

I postponed further search until morning, when I determined to resume my "often tried and seldom failed" tactics—to be up in the morning at daybreak when the grass is soaking with dew; the birds are then reluctant to leave the nest.

Next morning, the 15th, I was up shortly before five o'clock; it was a lovely morning, but everything was as wet as after a heavy rain. A few minutes brisk walking brought me on the ground again, and truly fortune favored me; for I had not walked more than 12 or 15 yards,

when a little bird darted from almost under my feet. It sped away, only to stop suddenly when some 30 yards off, and alighted on a tall weed. In another moment the air rang to the report of my gun and the bird dropped gently into the grass. Letting my hat fall at my feet, I quickly reached the spot but it took me fully five minutes to find the bird—in fact I was beginning to have visions of a nest and eggs with no proof of identification. But I found the little brown body, which proved to be a female Le Conte's Sparrow. There was not a mark of blood upon it, for I am always plentifully supplied with half charges of No. 12 shot when in the field, and find it kills small specimens beautifully clean.

Returning to where I had left my hat, I commenced the search, and again was fortunate, for I had hardly begun to turn over the grass when the nest was revealed, built well into a tuft of fine grass and carefully hidden from sight. It contained five perfectly fresh eggs, of a dull white ground color, mottled and spotted with a peculiar shade of light brown, a yellowish-brown; the markings in four of the eggs being very dense at the large end. The nest was composed entirely of fine grass, about 3½ inches in diameter and fairly deep. After being removed I found the nest difficult to keep together, it being carelessly constructed.

The collector who would look for the nest of this species must have much patience and perseverance. I know of no other bird that has tested my patience more than Le Conte's Sparrow. They often run and then skulk in the grass, keeping up an almost continuous "chip, chip." I have seen the male at times clinging to some weed or grass, giving his wheezy apology for a song. I have heard the birds singing after midnight on a fine warm night, but in the early morning they are almost silent.

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Vol. III.

JANUARY, 1899.

No. 5.

Editorial Eyrie.

During a long life spent in the pursuit of virtue under difficulties presented by the world, the flesh, and the devil, we have sometimes remarked the futility of explanations, excuses and apologies. Explanations seldom succeed in explaining things satisfactorily; excuses generally accuse oneself, as the French say; and the occasion for apologies ought never to arise. We are led to these somber reflections by the number of complaints which reach us from patient or impatient but always long-suffering subscribers who have failed to receive *THE OSPREY* through no fault of theirs. On investigating these complaints as fast as they were brought to our attention we have found them just and proper in every single instance. We are smitten on one cheek, and we meekly turn the other—fortunately, we have cheek enough for the emergency. Our subscribers do not want explanations, excuses, or apologies; what they want is *THE OSPREY*; they are perfectly right in this, and it shows great discernment. The melancholy fact is, that in the office irregularities consequent upon the recent change in the business management of the magazine, about a hundred addresses of paid-up subscribers were lost. We could do nothing but await developments in the most abject debasement of mind; but the vigor and energy of those devel-

opments have been simply phenomenal. Every case thus far heard from has been instantly attended to; and we earnestly hope our friends will continue to smite us on either or both cheeks till every such case is adjusted to their entire satisfaction, and every cause for complaint is removed. They say that lightning never strikes twice in the same place, and very likely *THE OSPREY* will never again be so nearly clubbed to death. Meanwhile, brethren, the brave old bird goes on as if nothing had happened, and we continue to entertain while we instruct our constituency in the pleasing Science of Birds by editing the best illustrated monthly magazine of popular ornithology the world has ever seen.

By the way—speaking of paid-up Subscribers for 1899—have YOU paid up for the current volume? Because, if you have not done so, why not?

A plate representing the Osprey's foot appears in the recent number of the *Ornithologische Monatsschrift des Deutschen Vereins zum Schutze der Vogelwelt* (pl. 15). It is quite good, but we like ours better—nobody can touch Mr. Fuertes—"in the Osprey's claws"—or out of them.

"The Osprey's Claws" seem to have a fetching way about them, as raptorial organs ought. For example, there is Mr. Charles F. Lummis, editor and chief source of inspiration of *Land of Sunshine*, the very brightest and best monthly magazine that reaches us from that or any other land. Mr. Lummis is an unterrified and unmuzzled and otherwise model editor, who keeps what he calls "The Lion's Den" in his Magazine, strewn with the bones of judgmental and pragmatical Daniels who went for wool and got worse than shorn. Our Editorial Eyrie is just a little Sunday school in comparison, and we should like to borrow a file for the Osprey's claws from Mr. Lummis, if he would lend us the one with which he sharpens his Lion's teeth. "I killed an Osprey when I was a boy," writes Mr. Lummis, "and picked him up a little unripe, and I know how his fingernails feel. If yours go as deep and hold as grimly, why God help the fellow, that's all. Still, I fancy God won't. If there is anything on earth that is needed in this relaxed and flabby social tissue, it is fearless criticism of the scrubs that infest us. If an honest and competent man has any one duty now-a-days it is to do his best to expose and shame the dishonest and incompetent, who are having things so much their own way. So, power to the Osprey's talons!"

We are pained to learn of the death, at Salem, N. Y., on Jan. 31, of Mrs. Caroline Hall Audubon, wife of John Woodhouse Audubon, and mother of the Misses Maria R. and Florence Audubon. This venerable lady, born Dec. 8, 1811, was married Oct. 2, 1841, thus becoming a daughter-in-law of John James Audubon; and her departure severs a link in the historic chain of American Ornithology. Mrs. Audubon had been a sad sufferer for many months when death came, not unexpectedly, as a blessed release from pain. Our heartfelt sympathies are extended to the bereaved family.

Parable of the Clever Kid and his Aged Sire.

"Pa! Pa!" exclaimed the Clever Kid, as he rushed in upon his Aged Sire, waving a copy of

the Auk for January, 1899; "they're tumbling to the philological racket! They're getting onto the orthographic curves!"

"Calm yourself, my son," said the Aged Ornithologist, who had one foot in the grave and the other almost there; "use no slang, but inform me why this unseemly merriment."

"Just you read it yourself, guv'nor," replied the Kid.

And the Sire's eye kindled as he saw on page 107—l-e-d-i-o-o-e-c-e-t-e-s.

"Hosanna to the Lord," cried the Aged Ornithologist, in a kind of holy rapture; "have I lived to see this day? Now let me lift my other foot into the grave, and sleep the sleep that knows no waking. The Committee on Classification and Nomenclature of the American Ornithologists' Union are learning to spell."

Letter Box.

GARNETT, KAS., Dec. 27th, 1898.

EDITOR OF THE OSPREY:

I was witness of an unusual sight in bird life on the 18th of this month; or at any rate it was an unusual sight to me. On returning from a trip into the country, I observed a remarkable number of Bluebirds. There were between 50 and 75 of them. They flew across the road directly in front of me, and as I had a good view of them I could not be mistaken in their identity. A few moments previously I had noticed four Bluebirds in the midst of a large flock of Robins, Chewinks and Yellow-hammers. This flock was near a large feed box, which accounted for their numbers. There must have been several hundred Robins. I had seen some large

flocks of Robins this year, but never so many birds of different species together. For two weeks previously there had been a heavy fall of snow and sleet, covering the ground, and I presume the birds were compelled to seek for food in the large feed lots we have here. Is it not unusual for Bluebirds to associate in such large numbers? In fact, they have been very conspicuous by their absence for several years past. During the entire spring and summer I only observed seven; and last year, four. I wish you would inquire through your columns if others have witnessed any extraordinary numbers of Bluebirds this winter.

Yours Very Truly,

HARRY JOHNSON.

Pigeon Holes.

GROUND NEST OF OSPREY.—The nest here figured was situated on the ground near the

point of Coltshead Island, in Penobscot Bay, Maine, May 26, 1897. The dimensions were: outside diameter 70 inches; height 36 inches; depth of cavity 3 inches. The nest was composed of small driftwood and other sticks, roots and rubbish, with a lining of grass and a few feathers. It contained three eggs, well advanced in incubation. Another nest with the same complement of eggs was found on the opposite point of the same island.—O. W. KNIGHT.



GROUND NEST OF OSPREY.

OUR NORTHERN LANIUS.—Many readers of THE OSPREY are no doubt familiar with our winter representative of the common Loggerhead. He ranges south to about the 36th parallel, breeding for the most part north of the United States. In the vicinity of Chicago he is almost as common as the Loggerhead, though less often seen on account of his shyness. I have observed him at various times during the winter from November 3 to March 28, but do not doubt that he is here several weeks longer. Lanius has

a bad reputation on account of his bird-eating

propensities. The charges against him are true, though I have never had a chance to verify them. But as in the case of other birds, much good may be said of him. In three stomachs examined I found nothing but spiders and insects, including beetles (*Carabidae* and *Curculionidae*) and grasshoppers. The farmers in this vicinity say that he is an industrious mouser, and among them he is known as the "mouse-bird." I once found a half-eaten field mouse fixed in the crotch of a willow branch which was undoubtedly put there by a Shrike, as I had frightened one from the same clump of bushes immediately before. Returning the next day I found that the mouse was gone. On account of his numerous visits to the city I suspect that he is in the habit of catching English Sparrows. If so, may he prosper in his good work!

This Shrike is shrewd in his manner of escape. Many a time have I seen one alight in a bush or tree, but on going to it invariably found no Shrike. He probably went through the bush and flew away close to the ground. He is also fond of flying along a ditch at right angles to his former direction, and is generally successful in getting away. He has the low flight peculiar to shrikes and while perching keeps moving his tail up and down. Like the Sparrow-hawk, the Butcher-bird may often be seen hovering in the air not far from the ground, apparently looking for some luckless mouse or insect. The Shrike's notes are varied and some are not unmusical, though the song is generally low and disconnected. Sometimes, however he does very well, for a Shrike, and I have often been deceived, thinking there must be some new songster at hand.

There is one individual of this species with which I feel somewhat acquainted, as he has a permanent winter residence which I visit occasionally, not far from my home. He lives in a patch of willows growing along a small stream, bounded on one side by the prairie, on the other by a corn field. Here he finds shelter and water, together with plenty of mice, birds and insects, to supply all his wants during the winter. Strange to say, this bird does not resort much to thorn hedges, so I have had no opportunity to observe that most interesting habit of impaling prey on thorns for future use. With his daring, active disposition, the Shrike is an agreeable contrast to the prosy Blue Jays and Crows of our every day winter experience. —E. BLACKWELDER, *Morgan Park, Ill.*

NEST OF THE BLUE-FRONTED JAY.—This nest was taken by myself on May 12, 1898 and is now in my collection. It was built in bay sapling about 18 feet from the ground, in a redwood forest. The photograph was taken from an adjacent fir sapling, by roping the two trees together for steadiness, hanging on with teeth and eyebrows, and trying several different exposures. In spite of such difficulties, two of the plates turned out fairly good and almost identical.—JOSEPH MAILLIARD, *San Geronimo, Cal.*, Sept. 4, 1898.

GREAT HORNED OWL'S NEST AND EGGS.—There was a slight hint of summer in the south wind this morning, and my spirit was restless; so I wandered away from the abodes of man,



GREAT HORNED OWL'S NEST.

stalking about in the woods, wading through snow knee-deep part of the time, until I came to the brink of a high bluff on the bank of Root river, whose waters were still covered with ice 18 inches thick. I leaned against a tree and watched some Crows circling over shrubbery in the distance, making a clamorous noise in keeping with cheerless surroundings. While I pondered, a Great Horned Owl, floated noiselessly on her downy wings from the cliff on which I was standing. How majestically she sailed in silence until concealed in tall timber on the opposite bank of the river, whence soon came the dismal cry, *hoo-hoo-hoo!* I wondered not at her reputation as a bird of mysterious omen. Then the thought of a possible nest on the ledge below struck me so forcibly that a few moments later found me on the river, trying to climb the perpendicular bank, with my hand camera fastened to my waist. The ascent was slow, but when about 25 feet above the river I was rewarded by finding the nest in a crevice of the rock. It contained two white spherical eggs, about the size of hens' eggs. They were deposited on the bare rock, save a few feathers from Mother *Bubo*, and nearly fresh. I took a view of the nest, secured the eggs, and then carefully descended, feeling well repaid for the difficult scramble.—A. L. SLEVSTER, *Preston, Minn.*, March 6, 1898.

BOB WHITE IN NORTHERN IOWA.—In early days the Quail was very abundant in this part of Iowa. It was not uncommon, in passing through woods bordering streams, to see perhaps a dozen or more coveys during the day, numbering from ten to sixteen or even eighteen birds. During extremely cold winters, they become very bold, and often took up

their abode around the settlers' rail corn cribs and grain bins, to remain weeks at a time, the farmer usually not molesting them. Sometimes they grew bolder even than this, and came about the cabin door to gather crumbs thrown out to them. In some cases I have known a flock to become so tame as to associate with poultry in the barn yard, and gather around the owner each time he came out to feed his poultry.

During some of those winters, after an extremely cold snap, I not infrequently found whole coveys huddled together beside some old stump, log, or brush-pile, frozen to death. Thus these birds were almost exterminated over considerable sections of the country. As the country became more settled and hunters more numerous, Quail became scarce, until now only a few small scattered coveys remain; and they seek the most out-of-the-way places, instead of coming near the abode of man, as in earlier days.—CLEMENT L. WEBSTER, *Charles City, Ia.*

NEST AND EGGS OF SOOTY GROUSE. I found the nest with five eggs near Kaponsen Lake, while surveying between Tacoma and Mt. Tacoma, on April 28, 1898. There was no bird on it; the eggs were cold and wet, as is usual before a set is completed. Next morning there were still five eggs, but at 5 p. m. there were six. I went next morning, while it was still too dark for instantaneous work, and photographed the nest, still containing six eggs, by mounting the camera on three stakes driven into the

visit it again until May 5, when I used all my four remaining plates in taking exposures of from ten to twenty seconds of the bird on the



SOOTY GROUSE ON NEST.

nest. The light is very deceptive in these tall woods, because the shadows are so sharp. Three of them came out all right, but her head was behind a leaf in all but one, and her tail was behind the tree at the foot of which the nest was placed. The brush was too thick to get a view from any other point. I set the camera on the tripod, which brought the lens within 2½ feet of the eggs, taking care to cover the lens with my hand till it was in position, as I had noticed that birds seem to think it is a fearful eye staring at them when it comes very close, and usually tumble off the nest in abject terror after staring back at it for a few seconds. After that I flushed her and found she had laid a seventh egg. CHAS. W. BOWLES, *Tacoma, Wash., June 25, 1898.*



NEST AND EGGS OF SOOTY GROUSE.

ground, so as to form a tripod; the stakes being from the surrounding bushes, they were less likely to disturb the bird. I was not able to

THE YELLOW-HEADED BLACKBIRD IN IOWA.—Though the geographic range of *Xanthocephalus icterocephalus* extends over a large area in North America, and the bird is said to be found in considerable numbers in Iowa, still, after a residence of more than thirty years in the northern portion of the State, I have but twice observed this Blackbird here. I have seen it in no other portion of the State, although always on the watch for interesting occurrences. The first authentic report of this bird here I have any knowledge of, was during the spring of 1884, when several flocks containing perhaps ten to thirty each, were seen on the farm of Mr.

John Turner, about four miles north from Rockford. On this occasion they were following the team with which Mr. Turner was harrowing, and were picking up seeds of weeds and grain, as well as the insects which were brought to view.

The next instance I recall of their occurrence in this portion of Iowa, was two individuals observed by me a mile and a half northwest from Charles City on the 25th of May, 1885. They were picking up grain which had been scattered along the road.—CLEMENT L. WEBSTER, *Charles City, Ia.*

PET CALIFORNIA CONDOR.—Mr. Emerson and myself lately drove from San Jose to visit Mr. F. H. Holmes at the base of the Berryessa foothills, in the midst of the peach and prune district. Here we saw his aviary of *Raptores*, containing two Western Redtails, a Bald Eagle, a Golden Eagle, a pet California Vulture; a Duck



PET CALIFORNIA CONDOR.

hawk formerly in this flock had been killed by some of its companions. The Hawks and Eagles appeared a little wild at Mr. Holmes' entrance into the large cage, where they had room for short flight; but the Vulture was as tame as a pet dog, and hopped up to us with outstretched, drooping wings, as if seeking to play or be caressed, showing no anxiety or dislike whatever at being handled or lifted. It is still a young bird, not having attained the bald head; its head and neck are covered with a slight growth of short, curly, downy feathers, that reminds one of the hair of a picaninny. It is supposed that this bird has to shuffle a good deal, perhaps

on a down grade, before it can rise on wing; but from the actions of this individual that took one hop to a perch 3 feet off the ground with the utmost apparent ease, I see no reason to believe that a bird of so much expanse of wing should have the least difficulty in taking wing from the ground. Mr. Holmes has photographs of his pet in various positions, thus obtaining a truthful model for mounting specimens. While we watched the Condor it never folded its wings, but held them outstretched with the primary feathers touching the ground, the wings forming almost a semicircle.—DONALD A. COHEN, *Alameda, Cal.*

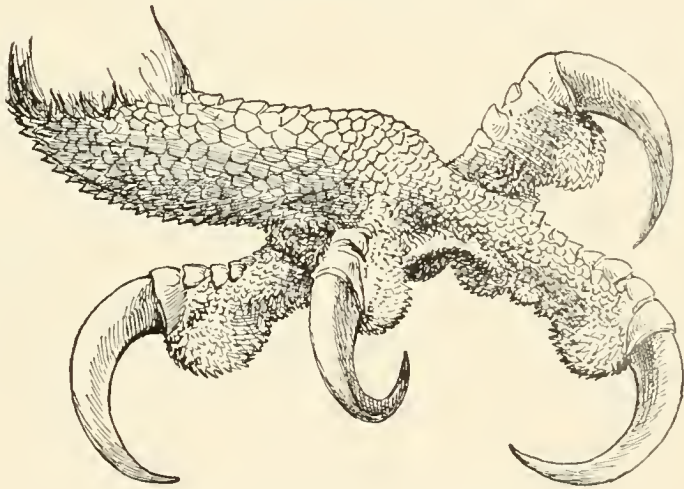
NESTING OF THE WHITE-NECKED RAVEN IN GIANT CACTUS.—At El Plomo, Sonora, the White-necked Raven seems to prefer this cactus to mesquite or paloverde for a nesting site. During the winter flocks may be seen where there is anything for them to eat. About the middle of January it is noticed that when the flock settles on the ground some are in pairs, which, in the later part of the month, may be seen standing on the ground all the day long; when the female walks off a few feet the male follows. This they keep up all day, never uttering a sound unless some one disturbs them, when the male utters a hoarse "kwank", the female flies, and the male follows. They begin building about April 1, often using the old nest again. It consists of thorny sticks and twigs, lined with cattle hair, rabbit fur, or anything soft that may be easily obtained. When they are finishing a nest the female goes after the lining, bringing it in small bunches in her bill, and drops it in the nest. The male follows her closely, though he does not seem to carry any of the lining, but keeps up his hoarse "kwank." After the female has loose hair enough in the nest she arranges it for the lining. The nests resemble those of a Crow, but are a trifle larger. One of them contained 5 eggs, April 18, 1898; incubation about four days advanced; they measured: 1.89 x 1.25, 1.95 x 1.23, 1.96 x 1.25, 1.97 x 1.27, and 2.00 x 1.26. Ground color bluish-green with the characteristic longitudinal markings of greenish-brown, lavender-gray, drab and lilac. There are two sets of markings light and dark. The shell has somewhat of a gloss.—J. H. CLARK.

ON THE NESTING OF DUCKS.—One of my notes on this interesting subject refers to a colony of American Scaups which I found on a small island in Marsjovia Bay, near the end of the Alaska Peninsula. The island contains about four acres, one-half of which is about 50 feet above sea level; but on both the east and west ends there is quite an area only a few feet above water. These gravel points are covered for the most part with a species of salt weed less than one foot in height, common to the sea shore of that country. Among these weeds on the west end there is a colony of about 50 pairs of Scaups

which have, to my knowledge, bred there for several years; while on the east end not a single nest can be found, although the conditions are practically the same. Furthermore, there is quite an area on the west end well suited to their wants; but they prefer to occupy a narrow strip along the edge of the weeds and place their nests close together, some of them not over two feet apart, others ten at the most, showing that they prefer to be neighbors. I cannot remember one isolated nest of *Fuligula marila*, and I have found many. With the exception of a few Arctic Terns the Scaups held the low land, while on the top of the higher portion of the island, which was comparatively level and covered with dry rank grass in bunches, were to be found nests of the Pintail and Mallard; how many I could not say, but while gathering eggs of the abundant Short-billed Gull *Larus brachy-*

rhynchus, for food, I accidentally discovered two sets of Pintail's and one of Mallard's. Two of these were within a few feet of each other—one of each species. From the number of birds flying excitedly about, I judged there were several more nests, but they were too well hidden to be found. I may also mention that while collecting in Alaska in 1894, I took no less than six sets of eggs of *Fuligula marila* and two of *Merganser serrator* from an island about 40 feet in diameter. The island was in a small lake, and there were as many more nests on it. I might mention many other instances of ducks nesting in colonies or in close proximity, but these will answer the purpose of this article. It is probably well known that Eiders generally nest in very large colonies.—CHASE LITTLEJOHN. *Redwood City, Cal*

In The Osprey's Claws.



The Bulletin of the Cooper Ornithological Club, Vol. I, No. I, for Jan.-Feb., 1899, reaches us promptly and makes an excellent beginning, upon which the Club is to be congratulated. The new publication opens appropriately with a biography of Dr. James G. Cooper, for whom the Club is named, and of whose ill health we regret to learn. The Club was organized June 22, 1893, and is in full activity, with a large number of energetic workers. Its labors put California distinctly in the lead; no other state or territory is so well represented in ornithology. The good character of the papers in the Bulletin may be inferred from the samples our readers have hitherto had in THE OSPREY. The most notable one in the present number is on the nesting of the Fulvous Tree Duck, by Mr. A. M. Shields. The observations are novel and striking. This Duck builds on the ground in tule marshes; nests with 17 to 32 eggs have been found; moreover, the birds sometimes drop them in the nests of other Ducks and of Coots. The eggs are roughish, dead white, sometimes slightly pyriform, and measure from 1.98 x 1.35 to 2.20 x 1.65. A new race of the Brown Towhee

is described as *Pipilo fuscus carolea*. The editorial notes are good, in form and substance.—E. C.

The Auk for January reaches us, somewhat delayed under the exigency of printing the Ninth Supplement to the American Ornithologists' Union Check-List—an important matter, occupying pp. 97-133. This gives the additions to and corrections of the Check-List which have come up during the past two years, something like one hundred in number, we suppose, though we have not counted them. There is little fixity in our nomenclature, and we presume that changes in names will be incessant as long as the science of ornithology progresses. Mr. Chapman writes on the Seaside Sparrows an article illustrated with a handsome colored plate by Mr. Fuertes. A readable article is by Mr. O. B. Warren on the Canada Jay, and if imitation be the sincerest flattery, THE OSPREY is flattered by the appearance in this article of four photographic illustrations, quite in the style THE OSPREY has made fashionable. Passing several strictly technical articles, we come to Mr. D. G. Elliot's very notable and timely pro-

nouncement entitled, "Truth versus Error," which we hope every reader of *THE OSPREY* will ponder well. This stinging satire upon the Advocates of Illiteracy in scientific language is followed by a feeble counterblast from our friend Dr. J. A. Allen, whom we are sorry to see posing as high priest and prophet of the Gospel of Error. The higher he climbs the tree of knowledge of Latin and Greek the more clearly he shows the insecurity of his perch. We hardly think he has a right to express any opinion on a question of philological proprieties, for he has never discovered that there is a science of philology as well as a science of ornithology. He should stick to the latter, and let the former alone. It grieves us to find him in such a fix. Mr. Witmer Stone gives a Report of the A. O. U. Committee on Bird Protection, which will be read with interest, especially by the members of the numerous Audubon Societies. We have the usual goodly array of notes, reviews, and news, which have from the beginning been conspicuous and important features of this standard quarterly, under its conspicuously able and steady editorial management.—E. C.

The Macmillan Company announces the publication in February, under the editorship of Frank M. Chapman, of the first number of a popular bi-monthly magazine of ornithology, to be known as "Bird Lore." This magazine will aim to fill a place in journalism similar to that held by the writings of John Burroughs, Henry Van Dyke, Bradford Torrey, and Olive Thorne Miller in book form. The authors just mentioned, and numerous others known for their powers of observation and description, will be among its contributors. The illustrations will be made from photographs of birds and their nests in nature. The magazine will be the official organ of the Audubon Societies for the pro-

tection of birds, and a department devoted to their work will be under the charge of Mrs. Mabel Osgood Wright, who lately won enviable distinction as co-author with Dr. Cones of *Citizen Bird*, the most popular bird book for young folks ever written. We shall heartily welcome the appearance of *Bird Lore*, which is published under such favorable conditions that its success seems to be a foregone conclusion.—E. D. S.

"*Quail Shooting in South California*" is the title of a readable article by Horace A. Vachell in the *Pall Mall Gazette* for January, 1899, pp. 115-120. It is considered "safe to prophesy that the Quail in the Coast Ranges will never be exterminated, as few sportsmen are willing to undergo exercise that puts to the proof brains, lungs, heart, and muscle." This is good news for the Quail; and the writer also adds, for the benefit of Quail shooters, that there "is no finer sport; it is, and always will be, *the* sport of California."

A World of Green Hills. Observations of Nature and Human Nature in the Blue Ridge. By Bradford Torrey. Boston and New York: Houghton, Mifflin and Co., 1898. 12 mo., pp. 285.

Mr. Torrey is well known as a good observer of nature, and a pleasant writer who makes easy reading for all who enjoy outing. This is, we believe, the sixth volume of a series of booklets, all bringing to the reader the freshness of the fields and woods. It describes a tour he lately made in North Carolina and Virginia, the birds, flowers and people he met, his search for ravens in the mountains, the natural bridge, and other attractive spots. It is not particularly ornithological, but Mr. Torrey has an eye for birds, knows where to look for them, and knows many of them in pleasant intimacy or in glad surprise.





Hairy Woodpecker.—L. A. FORTES.

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Original Articles.

NOTES FROM NORTH DAKOTA.

By EUGENE S. ROLFE, Minnewaukan, N. Dak.

ON June 9, 1898, in a narrow valley traversed by a flowing coulee and walled in throughout its length by steep, high banks, I discovered a bulky nest of sticks, twigs, and coarse dried weed stalks, nine feet up in a bunch of willows growing at the verge of the coulee and directly under its high bank. The sitting bird left her nest as I approached within twenty feet, through the thick brushy undergrowth. Numerous scraps of feathers could be seen caught on the points of the sticks protruding from the nest; and though the appearance of the sitting bird and her mate flying about fairly

eggs, the courage and dash of the pair, and certain fancied peculiarities of shape and plumage made me uncertain of their identity; so I shot the birds, which upon close examination proved to be very nearly normal specimens of Swainson's Hawk (*Buteo swainsoni*).

On June 19, while investigating an occupied nest of Swainson's Hawk in a lone willow bush on a sandy ridge near Devil's Lake, I discovered a bulky nest of the White-winged Shrike, built of thistle-down, weeds, and bark fibre, and well lined with fine dried grass and feathers. This nest was seven feet up and about three feet be-

low that of the Hawk; it contained six eggs, somewhat advanced in incubation. The sitting bird was loath to leave her eggs and did not in fact leave the bush, shifting her position from twig to twig during all the time I was struggling up through the thick, tangled branches to both nests. I had noted this species here rarely in the breeding season, but had not before chanced upon its nest.

On May 1, while camped in the wild country some fifty miles west, a cowboy volunteered to pilot us to some marshes where we were certain to find the Canada Goose nesting. He succeeded in his purpose, but as he was the one who chanced upon the only nest found he quickly transferred the six eggs to his hat and, bareheaded, spurred his bronco away to the ranch house, where he speedily got the eggs under a

sitting hen. The nest was a bulky down-lined structure of pieces of dried rushes and flags, supported on a platform of broken-down bull-rushes, in knee-deep water, near the centre of a broad marsh. The male could be seen swimming in a bit of open water, and as we waded toward him the sitting bird left her nest and the pair flew about us, their distress or anger for the time seeming to make them fearless.

Next day, relieved of the doubtful assistance of the cowboy, we performed the feat of discovering three occupied nests of the Canada Goose, and one of the Sand-hill Crane, inside of



NEST AND EGGS OF BELTED PIPING PLOVER.

indicated Swainson's Hawk, yet I thought I detected some unusual features. Furthermore, the eggs were four, a most unusual number of a pronounced pyriform shape, and in color grayish-white, sparingly spotted and stained with light reddish-brown; one being nearly immaculate, and one showing, in addition to the stains, numerous shell-markings of pale lilac. Swainson's Hawk I have never found to be a bird of remarkable spirit, but the male of this pair exhibited astonishing nerve, and repeatedly dashed at me as I pillaged the nest and packed away the specimens. The shape and number of the

thirty minutes, within a space twenty yards wide and one-fourth of a mile long. My experience and observation of these wild and wary creatures leads me to believe that this record will not soon be surpassed. One nest of either of these birds per year would be creditable work for a single searcher almost anywhere in the Northwest.

The junction of two coulees flowing from some considerable marshes and lakes has gradually cut a flat valley from one-quarter to one-half a mile wide between high, bluff banks. Spread out over this valley is generally a shallow sheet of marsh, through which the insignificant stream finds its way. Last fall no rain fell, and this whole valley, except a narrow strip along the little stream, became entirely dry and was swept bare by fierce prairie fires that blackened the surrounding country. A very light snow fall last winter did little to restore the usual wet spring conditions, and the only

The three nests of the Canada Goose taken here contained six, seven, and eight eggs respectively, and were not appreciably different from that described above, except that in each case they were upon the ground and surrounded by, instead of being placed over, water. One pair of the Geese were inclined to be somewhat pugnacious, making angry dashes at me and suddenly swerving aside after the manner of other smaller birds attempting defense of their nests; and, as might be imagined, a big 10 or 15 pound bird like this is capable of making quite a "bluff."

On May 16 I took a set of five eggs of this species that were evidently very far gone, and though they were out of the nest fully four hours before I reached home and got them under a hen, yet all hatched the next day. Three survived and are now, of course, full grown. They come at call, suffer handling readily and are much like domestic Geese. Just now, in early

December, immense flocks of Geese are passing daily in their migration south, and as their stirring *honk* resounds in the morning or evening our three captives join in the cry and vainly wave their crippled wings in the effort to follow their fellows overhead.

On July 5, accompanied by my son, I drove to the extremity of a low, flat point jutting far out into one of the arms of Devil's Lake. On a grassy spot we halted to eat our lunch. Suddenly a male Wilson's Phalarope started from its nest and four eggs in the midst of a slight tussock of grass a dozen feet away. While focussing the camera on the richly spotted eggs in the nest I noted the clear, flute-like note of the Belted Piping Plover, and glancing up saw the



NESTS AND EGGS OF COMMON TERN.

available nesting situations in the region remaining to the Geese and Cranes were offered by the narrow strip of rushes bordering the slender stream through the center of the valley. It was here that our search was so well rewarded. On a small flat hammock rising from the shallow water among the rushes lay the two big, polished, drab-colored eggs of the Crane, with light brown and gray markings. A few coarse weed-stalks carelessly laid on the bare earth of the hammock represented the sole effort at nest-making of the pair of great birds that stalked awkwardly back and forth on the opposite hills, uttering their peculiar guttural croaks as we trespassed on their preserves. This nest in its general features and situation was almost identical with that taken by me two years before, about a mile distant in the same valley. The date, too, was also identical, and it is not impossible that this was the same pair of birds.

pair running along the sandy beach some 50 feet away. Then we finished up our picture-taking, and having turned the horse loose to graze, opened up the hamper. A stretch of clean, dry gravel and sand, scantily dotted with weeds, lay between us and the shore, and toward this carefully crept a graceful Belted Piping Plover. We were particular to make no unnecessary commotion and gradually she crept toward us until in the space of ten minutes she had approached within 25 feet and remained motionless, only her upper parts being visible to us on account of intervening weeds. Just then the horse became entangled in its harness and it was necessary to straighten him out. This frightened away our little Piping Plover, but it quickly returned and edged cautiously toward us again, until it had reached the identical spot from which it had been disturbed. In the meantime the interrupted Phalarope was

seeking to get back upon its eggs, which still lay in the nest on the other side of us. Repeatedly it alighted on the ground near by and edged toward the nest, getting within a few feet; but as often its courage oozed away, and it would take wing and flutter about just overhead, uttering its inimitable little cry. In the course of half an hour, on rising from our lunch we stepped toward the Plover and discovered that she was bravely sitting upon her eggs! The latter were neat, clay-colored objects dotted quite uniformly with small black spots, and so nearly like the small gravel stones among which they lay that not one eye in a thousand would have distinguished them.

The nest was merely a slight depression surrounded carefully, and even lined on the bottom, with bits of smooth gravel ranging in size from number 6 shot to buck shot. The experience of witnessing a Wilson's Phalarope and a Belted Piping Plover both attempting simultaneously to creep upon their nests, respectively 12 and 25 feet distant, may fairly be considered novel.

This arm of Devil's Lake is a shallow alkaline bay. Some 200 yards from the shore lies a low, flat, 10-acre island—lately a mere sand bar—but now supporting along its centre a sparse growth of grass and weeds. I should hardly have visited this barren island as a likely spot, but for the prospect of finding the White Pelican nesting, large numbers of which I had noted were making this their regular resort. It proved however, that they simply alighted to disgorge and eat the fish taken in the lake, and I will not say their dumping ground was a fragrant spot. Many hundreds of the Common Tern were breeding here, their nests being scattered from end to end of the island. I could not discover among them any representatives of Forster's or the Arctic Tern. Four pairs of Avocets were also nesting, and but for the presence of the birds themselves one might have passed their nests unheeded, since in situation, appearance, and construction they were exact counterparts of those of many of the Terns, and located in the midst of a cluster of the latter. (And by the way—where does the Avocet nest "among the tall grass," as described by Davie? According to my observation, Raines' crude picture of Avocets and their nests is one of the truths told in his *Bird Nesting in N. W. Canada*.) Eight feet apart I noted nests containing respectively downy young of the Tern and Avocet, in which about the only distinguishing feature that readily caught the eye was the blue legs and feet of the young Avocets in contrast to the pink members of the Terns. A later visit proved that the young of both species take readily to the water and swim about freely, not only in the shallows but where there is considerable depth.

I could have repeatedly photographed the adult Avocets in some of their striking postures along shore, with one wing upraised and the other trailing, while the long handsome neck and head with its recurved bill were extended horizontally, and the body was somewhat crouched as the blue legs spun along the sand, but never at any thing less than 50 or 60 feet distant—too far for good results on a 4 x 5 plate. Not even the Willet is a more noisy or demon-

strative tattler or more fool-hardy than the Avocet when its nesting ground is encroached upon, and it would have been a simple thing to shoot every member of the little colony.

On June 19 on this island, in the midst of a strip of grass and weeds not exceeding 200 feet by 100 feet, was a perfect pocket of nesting Baldpates, Gadwalls and Shovelers. The eggs of the last two seemed to be well along in incubation or on the point of hatching, while all the sets of Baldpate's were still incomplete. And I believe that, in general, the last named rarely nests before June 20, and it is quite common to find eggs perfectly fresh after July 1. On July 5, an interesting sight here was a nest of eggs of the Gadwall in the act (so to speak) of hatching. Five downy young, apparently a day or more out of the shell, were scrambling over and under and around two youngsters still bedraggled with the contents of the shells from which they had just emerged. Two more partially underneath had their slimy heads and necks protruding at full length from holes in their respective eggs, and each was straining every nerve to burst its shell apart; while two eggs in the bottom of the nest were merely pipped. All this in a very well built nest, lavishly supplied with down. It must be confessed that the picture obtained of this fine subject is extremely vague; but the result of an effort by an amateur photographer is about as uncertain as the verdict of a petit jury—of which it has been said that even Divine Providence cannot foresee it.

I succeeded this year in adding the Green-winged Teal to my list of birds breeding here. Twice before, in the past dozen years, I had observed a single pair here in the breeding season, but it was not until this year that I discovered a nest containing eggs. Shortly afterward I noted a female swimming in a flooded meadow and making frantic efforts to divert my attention from her pretty little progeny that paddled away for dear life and quickly disappeared among the grass growing out of the water. Dr. McChesney, in his Report on the Birds of Dakota, gives this species only as a migrant; and Coles, in his *Birds of the Northwest*, states that he failed to find it breeding here, although he considered it possible that it does so.

On the same day I was treated to an exhibition of touching solicitude on the part of the Bartramian Sandpiper for her young. While driving across a piece of prairie I noted a pair of these birds making the usual signs that denoted a young family in the vicinity. Out of mere curiosity I alighted and soon spied four youngsters straggling about in the long grass in their efforts to get away. Picking one of the little fellows up in my hand it commenced to peep vigorously; when one of the parent birds that had been flying about nervously fluttered down at my very feet and within reach of my outstretched hand in a spasm of anxiety, exhibiting every sign of being in *extremis*. Of course it adroitly avoided my efforts to actually seize it, though I would gladly have taken home the young if I could have also secured one of the parent birds to brood and care for the little ones while in captivity. Failing in this I finally released the young bird, to the very evident relief of both.

A curiosity taken by me this year was a set of 9 eggs of the Blue-winged Teal that measure only about 1.50 x 1.00. When it is considered that this is about the size of eggs of the domestic Pigeon, and but little larger than those of the

Sora Rail, they strike one as a pretty feeble effort for a Duck that has every appearance of being up to the average in point of size and vigor.

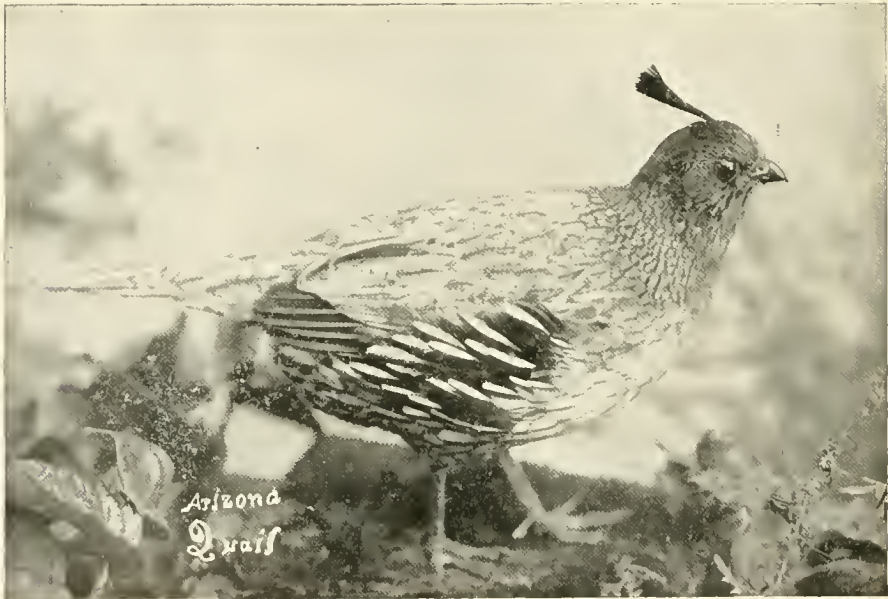
GAMBEL'S QUAIL.

By GEORGE F. BRENINGER, Phoenix, Ariz.

FOUR species of Quail are known to occur in Arizona; of these Gambel's, or, as commonly called, the Arizona Quail, is the most numerous over a wide range of territory. Its correct scientific name is *Lophortyx gambeli*.

Many a desolate desert scene is enlivened by their presence. Once they were exceedingly numerous in the valleys of the Salt and Gila rivers, but traps and guns have greatly thinned their ranks. Seven years ago Quail were shipped out of this territory alive by hundreds of dozens, to the markets of Denver, Colorado

thickets near the ancient ruins of Casa Grande; while driving along the road, 14 pairs were counted within sight at once. This was late in June. Throughout the warm valleys nidification takes place in April, continuing through May and June, the last brood coming out in September. I find the set of eggs smaller than that of most species of Quail whose eggs I have collected. A nest which I discovered among drift wood in one of the channels of Salt River, contained two eggs on April 13; 7 days later it held 9, and 14 days later it held 13 eggs, which



ALBINO ARIZONA QUAIL

Springs and eastward, until the question of total extermination was one of no distant date. At the next meeting of the legislature an act was passed prohibiting this shipment, live Quail to be offered for sale only in home markets. This had a telling effect, and the great inroads made by wholesale trapping in the early '90's, when every Mexican had a line of traps, were never made whole again. The last legislature has caused to be put into effect a stringent set of game laws, in which no trapping whatever is allowed, and shooting only from October 15 to March 1. It now seems probable that we may have Quail fairly numerous at some distance from the larger towns for many years. I found them most abundant among mesquite

were collected as the full set. Another was discovered in a hole in a large mesquite tree, by the hurried exit of the female as I passed. This set was complete with 12 eggs. The usual nesting site is on the ground, against the trunk of a tree or among fallen limbs; but from former sad experiences many birds are nesting above ground, even using old nests of Thrashers and Road Runners, that their eggs may be safe from the many reptiles which one meets with everywhere. The female attends to the duties of incubation alone; after the young are hatched the duties are shared by both parents, which seem equally attentive to the welfare of the young. Albinistic birds, either wholly or partly white, are frequently taken. Two such were kept in a cage

in this city for some time, until one escaped. Their owner was much elated over a pair of white Quail, from which he hoped to produce many more, and thereby establish a "corner" on

white from loss of pigment, but in this case each feather is broadly margined with yellowish-white, as shown in the accompanying illustration. Gambel's Quail seems to take kindly to



ADULT MALE AND FEMALE ARIZONA QUAIL.

albinos; but live Quail are not joys forever, and our friend is now a sadder but wiser man. I had recently in my hands for mounting a Quail whose plumage I can call nothing else but a freak. In albinism the entire feather becomes

confinement, becoming quite tame. I have known of many sets of eggs laid by Quail in captivity, but as yet have heard of no young being reared.

THE SCOURGE OF EGG COLLECTING.

By Rev. W. F. HENNINGER, Waverly, Ohio.

The Auk for January, 1899, page 61, speaks of the "scourge of egg collecting," telling us that "egg collecting has become a fad, which is encouraged and fostered by the dealers until it is one of the most potent causes of the decrease in our birds." The truth of this is proven by referring to a man, numbering in his cabinet 210 sets or 917 eggs of the Kentucky Warbler, etc. The December number of *THE OSPREY*, on pages 62, 63, contains an excellent criticism of the "Eggs of Native Pennsylvania Birds: A World's Fair Collection," by F. H. K(nowlton), which, like the Ornithological Sermon in the November number, is one of the best articles on the subject of "egg hogging" that I ever read. The "Ornithological Sermon" strikes the egg misers, who tell of their great success in robbing nests, in the reading columns or advertisements of *THE OSPREY*.

In this short paper, I should like to call the attention of *THE OSPREY*'s readers to another book containing a vast amount of information in regard to bird murdering, a book which, though it has decided merits, shows us the "scourge of egg collecting" under the guise of science. This is Oliver Davie's *Nests and Eggs of North American Birds*, now in its fifth

edition. It seems bold, especially for one who is not an "authority," to criticise this book, which has been extolled to the skies by so many ornithologists; but I believe there is plenty of room for criticism. The number of cases of "egg hogging" or bird murdering given in this book is abominable. Let us briefly refer to a few of these cases. We hear in this book so often of the extensive oological collection of Mr. C. W. Crandall, of Woodside, New York. Very well! Page 8 tells us of 12 out of 46 sets of eggs of *Gavia arctica* in Crandall's collection. Page 13 speaks of a series of 94 eggs of *Ptychorhamphus alencicus* (which are all white, shaded with emerald green). Page 195 talks of 19 sets or 38 eggs of *Cathartes aura*; page 196, of 48 eggs of *Catharista urubu* taken between February 28 and June 5; page 204, of 38 eggs of *Accipiter velox*; page 217, of 60 eggs of the Golden Eagle; page 221, of 41 eggs of the Gyrfalcon; page 283, of 56 sets of 112 eggs of the Chuck-will's-widow; page 286, of 72 eggs of Merrill's Partridge; page 287, of 38 sets of the Florida Nighthawk—and so on, *ad nauseam*. On other pages we hear especially of a certain Mr. Morris' having piles of eggs like those of Mr. Crandall (*cf.* page 209, 61 eggs of *Buteo lineatus*). Then we hear of 50 eggs of

the Guadalupe Petrel, collected in two days; of thousands of Pelican's eggs; of 500 Coot's eggs in California; of hundreds of Osprey's eggs taken on Shelter Island—all in the interests of science, to be sure!

I ask with Mr. F. H. Knowlton: "What possible advance can there be to science for a single private student to possess 112 eggs of the Chuck-will's-widow, or 61 eggs of the Red-shouldered Hawk?" It may be said that these men purchased a majority of these eggs. That matters little! By buying from collectors they encourage the wholesale destruction of bird life. But more than that: The cruelty recorded in the above-mentioned work (page 277), of forcing a poor Flicker to lay 71 eggs in 73 days in the interest of science, is so outrageous that words fail to describe it. And last but not least, the author must be placed in the same category as the other men. In the Part II of his work he mentions the fact "that animal life *must* be protected by the naturalist, for if it is exterminated, where has his delightful study gone? The naturalist cannot afford to kill the goose which lays the golden egg!" She may lay another. It would seem that Mr. Davie would act in accordance with his words, but I am afraid that he is doing his share to kill the goose that lays the golden egg! For example, on page 362 of his book he says: "In the month of August and during the first two weeks of September, 1888, Mr. Rudolph, A. L. Baker and myself collected 29 nests with eggs of the Goldfinch"—a total of 145 eggs. All in the interest of science! Poor little Goldfinches!

A man who can do such collecting is unworthy

of the name of a naturalist. Science does not care for men who tell us in one minute to protect the birds and in the next how many nests they rob themselves. It sounds ridiculous to hear such men censure plume-hunters and then do the same thing, *mutatis mutandis*. Science mourns over such deeds and such men as Crandall, Norris, Davie, and others. They and science have nothing in common. These men, doubtless, care little what I, an unknown person, may write about them; but after studying ornithology for 4 years in Germany and 6 years in this country, let me say that I have never seen another book in which so much "egg hogging" and egg robbing is compiled and told with so much joy and so little shame as in Oliver Davie's Nest and Eggs of North America Birds. The heart of any true scientist is filled with disgust and shame that the word "science" is abused by such people. And I do hope that the readers of THE OSPREY will not only refuse to aid such men, but will also pledge themselves with a sacred vow never to commit similar deeds. Otherwise, all our Audubon Societies, rigid State laws, Committees on Bird Protection, etc., are not worth the paper on which their proceedings are written, if we all do not help practically as much as we can to do away with the "scourge of egg collecting".

[We admire Mr. Henninger's vigorous vocabulary, though we miss any words of loving kindness and charity for an erring brother. He is perfectly right from his own standpoint, in imitating Christ to the extent of bringing not peace, but the sword. Mr. Davie has written our best all-round egg-book, and is perfectly right from his own standpoint. Our columns are open to his defense from this attack.—EDS.]

A NEST OF THE BLUE-THROATED HUMMINGBIRD.

BY GEORGE F. BRENINGER, Phoenix, Ariz.

THE Blue-throated Hummingbird (*Caligula clemencia*) has been known as a bird of the United States for a few years, but very little has been learned of its nesting. The late Maj. Bendire mentions in his 'Life Histories' the taking of a single egg by Mr. E. W. Nelson. This egg, now in the United States National Museum, was taken in the State of Mexico.

Early in June, 1897, I had the pleasure of taking the only nest and set of eggs of this species, so far as known in the United States. These were found in the Huachuca mountains and probably less than ten miles from the border. Ramsey's canyon, in which this nest was found, is fourteen miles south of Fort Huachuca. Three miles up, the canyon narrows to merely a seam between two black walls, and is known locally as "the box". A massive wall of granite, 600 feet in height, stretches across the canyon at a right angle. The action of water for ages has worn through it a gorge which in many places is but six or eight feet wide—into which dark and gloomy crevice the sun never shines.

On that pleasant June morning, I stepped from stone to stone, admiring each bunch of

ferns as more beautiful than the last, each bright red snapdragon so brilliant in its bed of green moss. An anxious Black Phoebe had a nest in which were four young, under an overhanging rock; this and some White-throated Swifts darting far above me, were the only forms of bird life visible. Presently I imagined I heard the indistinct whirr of a Hummer's wing; yet so faintly that the possibility of a Hummingbird in so gloomy a place soon passed from my mind. Just a little way ahead I noticed one of the prettiest masses of maiden-hair fern that I had seen since leaving the Pacific coast. In its midst, fastened to the longest fronds, was the nest of a Hummingbird, and in this were two eggs as large as a Sparrow's. The mother bird was nowhere to be seen. After exhausting my patience in waiting I went on, and at the end of the gorge found the female perched on the limb of a dead spruce. The bird secured, I returned, carefully removed the eggs, and then the nest, with a good portion of the ferns. The nest, like those of all Hummingbirds, is a marvel of beauty, made up of mosses of several colors, oak catkins and spider webs.

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Editorial Eyrie.

We have pleasure mixed with pain in calling special attention to the remarkable article by our distinguished collaborator, Dr. Gill, who appears in this month's "Letter Box" with a proposition for the new great work on the Life History of North American Birds. Dr. Gill is perfectly right, as usual; anything he has to say on such a topic is worth close and careful attention. It is perfectly true, as he contends, that the families of *Oscines* as they now stand in the American Ornithologists' Union Check-List are so far fictitious and worthless that they all require to be degraded from such taxonomic rank. We have known that for 25 years. Whether that result can be effected is another question, concerning which we are not as yet prepared to speak. That Dr. Gill has thrown a bomb-shell into the ornithological camp cannot be doubted; and we should like to know how every reader of THE OSPREY feels about it.

Waiving the important matter of such a radical departure from our established classification, the biographical work proposed by Dr. Gill is perfectly feasible. We have the brains, and the money too; all things are possible to two men—the one who knows how, and the one who pays. We do not yet venture to announce or commit ourselves to such an enterprise, much as we should like to see it begun in our next number, and make our subscribers a present of an OSPREY Supplement every month, containing an instalment of the splendid History proposed.

But we must first hear from them. We wish every one who reads this number of THE OSPREY would write to us about it, and tell us how the proposition strikes him. Does he like it? Does he want it? Will he stand by it, and possibly be able to collaborate in such an undertaking? When we shall have heard from a sufficient number of active practical ornithologists we shall have something further to propose, if the answers to this call are satisfactory.

It takes all sorts of ornithologists to biographize birds, but there are two typical species of the genus, who respectively represent what may be called shot-gun versus opera-glass ornithology.

One of these species writes as follows: "On the morning of Feb. 1st I discovered a Hawk's nest. I had on my warm overcoat, which I gave to a friend to hold, and I climbed the tree. I found 2 eggs, which I unfortunately swallowed, but I succeeded in shooting both the old birds."

The other one of these species favors us with the following, in her happiest vein: "On May 1st, while walking along a beautiful country road, I found the nest of a tiny Sparrow. The dear fluffy babies were all in it, and Mama Sparrow sat by with food in her bill. All the bright long summer days I watched these feathered darlings, and when my happy holiday was over left them with keen regret."

Some say these differences are due to age and sex; but we think the characters are of specific value. No intergradation is observed, though the habitat is the same: Eastern N. Am., resident, breeding throughout in suitable situations, especially in the vicinity of large publishing houses.

Perhaps some other species than either of these is required to answer Dr. Gill's purpose.

If any of our readers would like to know how many species of birds there are, we can give them the information on the very high authority of Dr. P. L. Selater, Secretary of the Zoological Society of London. In an article in Nature of Dec. 15, 1898, Dr. Selater gives a total of 11,614 species, of 2,255 genera and 124 families.

Parable of the Clever Kid and his Aged Sire.

"What's that you're reading, dad?" asked the Clever Kid, who was blowing a set of eggs of *Haliaeetus leucoccephalus* he had just taken near Washington, D. C.

"My son," replied the Aged Ornithologist, who had one foot in the grave and the other almost there, "I am perusing Sprachregeln für die Bildung und Betonung Zoologischer und Botanischer Namen von Prof. P. Kretschmer."

"Oh, you've got hold of that thing for teaching a fellow to form names O. K. from Greek and Latin—going to give it to me when you get through with it, ain't you?" said the Kid, carelessly.

"Nay, not so," answered the Aged Sire; "the

Bible teaches us to remember the poor and needy, whom we have with us always. I shall send these useful instructions to the Committee on Classification and Nomenclature of the American Ornithologists' Union."

Letter Box.

A GREAT WORK PROPOSED.

WASHINGTON, D. C., *January 31, 1899.*

EDITOR OF THE OSPREY:

I have the pleasure of laying before your readers the following

SUGGESTIONS FOR A NEW HISTORY OF NORTH AMERICAN BIRDS.

OUR PREDECESSORS.

Only three more or less complete works have been published, giving the external characteristics in connection with the biographies of the birds inhabiting the regions which constituted the United States for the time being. Those three, it need only be added for form's sake, are (1) Wilson's (with Ord's and Bonaparte's continuations), (2) Audubon's, and (3) Baird, Brewer and Ridgway's. The numerous other works on American Ornithology are more or less restricted in scope, covering only portions of the territory, never completed, superficial compilations, mostly confined to the exhibition of structural characters, or monographic of limited groups.

Some may think (and do think) that Nuttall's "Manual of the Ornithology of the United States and Canada", published in 1832-34, should be included in the same category as the works of Wilson, Audubon, and Baird, Brewer and Ridgway. I have inclined to that opinion myself, inasmuch as the whole territory was covered by Nuttall, both systematically and biographically. This mention, however, may suffice for the present.

Of course this enumeration only includes biographical ornithographies covering, in intention at least, the whole area of the United States. Consequently no mention is in order of mere descriptive works. The two most recent ones, however, will be very useful in connection with the new work contemplated. Those are Dr. Coues' Key to North American Birds (1872-97), and Mr. Ridgway's Manual of North American Birds (1887-97). Both are excellent and the full descriptions of the Key are the best of their kind. Nor do I forget the numerous volumes descriptive of birds of limited faunal areas, enriched as many of them are by valuable biographies. I have looked upon one of those volumes—The Birds of the Northwest, by the principal editor of THE OSPREY—as a model for the biographical treatment of the members of the class, and its excellence has suggested that under the same auspices a more general work could be prosecuted with success.

DEFICIENCIES.

The great general works that have been mentioned are worthy of much, if not all, praise, but nevertheless they are all and each deficient in

some respect or other, and the earliest, from a scientific point of view, have become long obsolete.

Both Wilson's and Audubon's original works observed no classification and were merely unconnected descriptions and biographies of species without any logical sequence and only following, one after the other, according to the convenience or whim of the authors. Neither work had more than the names of the genera, if so much as that. No further comment need be made.

The work of Baird, Brewer and Ridgway is still a standard and may be (and is) advantageously used for identification of specimens, for concise and definite information as to diagnostic characteristics, and as a store-house of data concerning the habits of many species.

A NEW WORK TIMELY.

A quarter of a century has intervened between the publication of the three volumes treating of land birds and the present time. That quarter century has been more fruitful in observers and describers than the preceding three quarters, and the time is ripe now for the commencement of a new work on North American birds. The time that has elapsed is even in years more than intervened between the first two of the great works. Wilson's "American Ornithology" was commenced in 1808 and terminated (but not completed) in 1814. Seventeen years passed and a new work was begun. Audubon's "Ornithological Biography" was eight years in publishing—1831 to 1839. Numerous works were published afterward, but did not cover the whole field and more than a third of a century passed before one with equal scope was given to the world. Baird, Brewer and Ridgway's "History of North American Birds," covering all the land birds, appeared in three volumes in 1874. The two volumes on water birds, however, were not issued till September, 1884, some months after the appearance of Coues' Key in its enlarged second edition.

But although less time has passed since the last work appeared than intervened between it and Audubon's, more work—vastly more—has appeared than between the preceding epochs. I repeat, then, the time has come to commence another ornithology, to gather the harvest scattered in many fields, to bring it together in a new granary. A very decided improvement, too, can be effected, it seems to me, in the treatment of the life histories of the beings to which we are devoted.

As already indicated, Wilson's and Audubon's original volumes were composed only of inconsequential series of descriptions of species with

no family or generic diagnoses. Baird, Brewer and Ridgway's "History of North American Birds" was a great advance, inasmuch as system was introduced and for the time quite well developed. The families and the genera were, on the whole, well diagnosed. Thus generalization was applied to the classificatory data comprehended in the volumes. But there was no generalization of the biographical information. That information was only given in the form of observations on the individual species. I dislike to say more, but I feel bound to add that there is a certain appearance of crudity in the compilation of the biographies that has been always repellent to me. The author who assumed the task of digesting the biographical data was a much less able man than his collaborators, Baird and Ridgway, who alone assumed the systematic portion of the work. He did not attempt to generalize or generize (pardon the word it is needed) his facts.

DESIRABILITY OF GENERIZED BIOGRAPHIES.

One of the features that would be most desirable in the new Avifauna would be a recapitulation of the habits common to all the species of a genus under the generic caption. In fact, a summary of all the ecological features characteristic of the combined species, and an indication as to the range of difference or divergence, would fill a want that is really often felt by some at least. The mere attempt to make such a summary, or to criticize, would, itself, clarify the mind and impart a more vivid perception of what may be known in a dormant way, but not appreciated in its bearings on a given subject. Most of the physiological characteristics of birds are common to all the species of a genus. This fact was appreciated long ago. As far back as 1778 dear old Gilbert White incidentally directed attention to it in the *Natural History and Antiquities of Selborne*. In his "Letter xlii" to Daines Barrington, he urged the desirability of learning to tell birds in the bush as well as in the hand, and claimed that the genus to which a bird belongs might be recognized in most cases at a distance. He remarked, "A good ornithologist should be able to distinguish birds by their air as well as by their colours and shape; on the ground as well as on the wing; and in the bush as well as in the hand. For, though it must not be said that every *species* of birds has a manner peculiar to itself, yet there is somewhat in most *genera* at least, that at first sight discriminates them, and enables a judicious observer to pronounce upon them with some certainty. Put a bird in motion,

'—et vera incessant patuit—','"

What was true in White's day is true to a much greater degree in ours. Then the genera of birds were often heterogeneous assemblages and not natural aggregates of species—certainly not when all the extra-European species were considered. Now they are so strictly limited that, for physiological purposes, if for no other, they are little more than diversiform species, even when the variants of a genus are very numerous.

I have frequently desired to know to what extent certain habits were peculiar to species or common to all, and in order to do so had to

search through the biographies of all the species, and even when I had finished the task had to indulge in much assumption, owing to the lack of definite information. In fact, the comparative method had not been followed, and too often it looked as if the species under review had been regarded as a being which was unlike any other that existed. This is not as it should be. The various biographies should be prepared on a regular plan and the data given in a uniform sequence for each species, and a summary furnished for each genus. The deficiencies in our knowledge could then be perceived at once, and some one of the numerous observers might be incited to fill the void. A greater interest would be imparted to the subject, and many students who do not know what to observe would be glad to learn how to direct their energies.

PROPOSAL FOR PUBLICATION.

The publication of such a work could be commenced in a few months. It need not be carried on in a systematic manner, that is, in a regular series, such as is given by the celebrated Check-List of the American Ornithologists' Union. We would have many precedents for a contrary course. We could avail ourselves of the researches of many, and take up for publication genera and species to which attention would be given at any time. The first two American ornithologies were published on similar lines. So also have been many European works, and notably Dresser's great work on the Birds of Europe. But I would not altogether leave the descriptions to be bound in such incoherent fashion. The genera might be published as monographs, each with its own pagination but on the inside of the page, and when the work, or any volume should be completed, a title page and table of contents could be supplied with indications for numbering on the outside of the pages. Dresser's work, already referred to, is an example of such a mode, and George Robert Gray's great work on the Genera of Birds is another.

We might begin the new History of North American Birds in connection with THE OSPREY, giving it in the form of monthly appendices, which might be bound up with each volume of the periodical at its end, or reserved and filed for binding as an independent work. Provision could be made for the accommodation of both parties—those who would prefer to retain it as part of the volumes and those who would rather separate the monographs for an independent work. When completed, systematic as well as alphabetical indexes could be supplied for THE OSPREY, as well as title pages, tables of contents and indexes for the independent work.

CLASSIFICATION TO BE ADOPTED.

The general classification might be left to the last, and thus the opportunity might be enjoyed of availing ourselves of the latest utterances of science. These, I hope, will emanate from the American Ornithologists' Union. I should be willing to accept the outcome of the united wisdom of the Union as being as close an approximation to the truth as was feasible for the time. Such agreement, it is true, would be rather a compromise or agreement by conven-

tion than the result of scientific deduction, but a very long time must elapse before we can realize a classification which is the best expression of morphological facts. Meanwhile the conventional agreement in question, it appears to me, will be the most convenient for all.

I have little doubt that before the time comes to combine the signatures of the new work in volumes, the Ornithologists' Union will have modified their present classification. There is, it is no secret, much difference of opinion among the members of the executive committee respecting various questions of taxonomy and nomenclature, and the opinion of one of the number may have a value outweighing all the others in some cases. Nevertheless, the weak points of any one may be appreciated by several better than by the one, and for that reason I would be disposed to adopt the verdict of the majority as being as near right as any other for the time being. I am aware that there are and doubtless will remain weak points. For example, the present sequence from the Auks to the Thrushes is quite arbitrary, and is simply the result of turning upside down the old scheme in which the Thrushes were placed highest on account of a fanciful metaphysical conception and assumption. Of course the proper way to arrange the sequence would be to determine what group is the most generalized, commence with that, and proceed onward by approximation of those groups successively most nearly related. I doubt, however, whether we will obtain all the requisite data for such a work in time to use them.

AVINE ORDERS.

But there is one set of facts which we can feel sure of now, and which the American Ornithologists' Union owes to itself and the scientific community at large to attend to. The catalogue of the Union preserves the old-fashioned "orders" and "families" in its latest issue, in spite of what the individual members must know and realize. The attribution to the so-called orders of birds of that rank is a sin against classification, as well as the truth, which should not be persisted in. It involves misstatements and wrong generalizations, which give an entirely erroneous idea of the character and relationship of the class under consideration. The class is remarkable above all other vertebrates for its intense morphological homogeneity, that is, close resemblance to each other in structure. The differences between the extremes of the living species are less than those between the groups of the reptilian orders of turtles, or lizards, or serpents, or than those between the suborders of Primates (if we include therein the Lemurs), or those of Carnivores or Cetaceans. I would scarcely recognize any orders among living birds—certainly not more than two. It is questioned by some whether we ought to recognize the Birds as a class, a few, such as Cope, Steinmann and Döderlein, regarding the group as a mere division of Sauropsids or reptiles; but, although I recognize the slight differences, I am not prepared to deny class rank to the feathered vertebrates.

I have been told that we had to recognize orders because there is no other category which could be used for the groups so called. I would

not pull down without an attempt to repair the damage done thereby and therefore make a suggestion. For provisional purposes, the orders of most ornithologists might be designated as suborders and the so-called suborders would have about the value of superfamilies. The superfamily is a category which I first used for aggregations of mammalian families of less than subordinal value in 1871, and since then it has been employed in the classification of many orders and classes. In ornithology Stejneger skilfully applied the superfamily as early as 1885, and almost all of his groups so designated appear to me to be well restricted and therefore worthy of retention.

NATURAL SELECTION AMONG BIRDS.

One of the most remarkable features in zoology is the manner in which nature has selected from the hosts of birds which must have had their day. I have heard the statement several times that nature was limited in her selection by the exigencies of the case and that the particular type manifest in the living forms was the *only one* fitted by structure and environing conditions for aerial life. The bats and the pterodactyles as well as the Archaeopterygids (tailed birds of the Jurassic age) and other toothed birds are evidences of the potentiality of nature, clearly demonstrate that she was not confined to a special type of birds, and hint at what might have been. Nevertheless, the culmination of the type in the specialized class which survives, and further in the very specialized group of singing birds or Oscines shows that the group is specially fitted for accommodation to present conditions. A culmination of like degree is seen in no other class of vertebrates, and the development of the characteristic in birds is therefore especially noteworthy and deserves to be expressed in the most prominent manner possible. But, on the contrary, every device seems to have been adopted to conceal the truth. First, the primary divisions of the class have been named orders (or even subclasses) and then the oscine birds have been distributed among numerous families.

When we inquire what are the characters of the orders, we find that they are distinguished by superficial features only and those of very slight value, such as, whether the legs are short or long, whether the toes are webbed or free, whether the hind toe is connected with the inner or not, and whether the bill is hooked or straight.

To appreciate the slight importance of such characters, it is only necessary to pass in review a good series, and we find the variation is of such a nature that a character which is used for ordinal purpose may be manifest elsewhere in the representative of another "order" otherwise contrasting with it. For example, two genera that may be related even, the Secretary bird of Africa, generally referred to the *Raptors*, and the Seriema of South America, usually referred to the *Herodiones*, belong nearly as much to one order as the other: *Mesites* resembles "the *Helioornithes* in its head, the Penelopes and Curassows in body, and especially its wings, and the Pigeons in its feet," and was placed by Gray, Bonaparte and Hartlaub in the family *Megapodiidae* and associated by

Gray and Hartlaub with the *Passeres*; but A. Milne-Edwards demonstrated that it had gralline characteristics and approximated it to the Rails and Herons. The Heliornithids themselves "have been perhaps more tossed about from pillar to post of the ornithological edifice than most; they have mainly oscillated between the Divers and Grebes on the one hand, and the Rails on the other." Beddard thinks that they "form a distinct family which has traversed for a certain distance the branch leading from the Rails to the" Loons. *Chionis* is another of those equivocal types which almost equally approaches and deviates from, and has been classed with, waders, swimmers, and gallinaceous birds, and at last was regarded by Coues and Kidder "as a connecting link, closing the narrow gap between the Plovers and Gulls of the present day." These instances are sufficient to indicate the want of definiteness and the uncertainty of the characteristics of the so-called orders of birds.

OSCINE FAMILIES.

The families of Oscine birds are at least as unsatisfactory as the orders. They are based on such characters as the various degrees of development of a single wing feather (the first primary), the form of the bill, whether the bill has a slight notch or none, whether there are feathers over the nostrils or not, and even on size and color. For example, the *Corvidæ* are diagnosed as being "larger (wing more than 4.00 inches)" and thus contrasted with the *Paridæ*, which are "smaller (wing less than 4.00 inches);" the Birds of Paradise are segregated in a family distinguished from the Crows only because there is an exuberance of feathers *somewhere or other* (in no two genera the same), and the most distinctive character that has been found for the *Turdidæ* is the spotting of the breast of the young. Nor is this protest against the inordinate value of some of the groups of birds the first made by myself.

I am tempted here to indulge in a reminiscence which may interest you. A quarter of a century ago, Prof. Baird, having nearly completed the three volumes of the "History of American [Land] Birds," by Baird, Brewer and Ridgway, asked me to write an introduction giving the general aspect of ornithology and a synopsis of the major groups down to the families. I was then his guest at Peak's Island, and one bright afternoon in August (1873) I dictated to his stenographic secretary the matter appearing as the first three and a third pages in the introduction to the History. Subsequently, on my return to Washington, I got together all the skeletons and skulls of birds that could be found, and, although I had been disappointed previously, hoped to be able to discover osteological or other anatomical characters that would co-ordinate with the external features generally used to distinguish families. All my efforts were fruitless, although I found characters of minor importance, but on account of the paucity of the material could not satisfy myself of the value of those characters. Various demands on my time deterred me from pursuing the investigation further and the knowledge that my views would not harmonize at all with those expressed in the body of the work added force to reasons for declining to do more. Pro-

fessor Baird, with his usual liberality for heterodoxy, expressed perfect willingness to tolerate the expression of difference of opinion, but I deemed it best to persist in declining. Finally Dr. Coues came to Washington, was appealed to by Prof. Baird, and undertook the completion of the introduction. Doubtless, the work gained by his accession and, reading between the lines, it would seem that he shared some of my views respecting the taxonomic value of the groups, but was willing to follow in the current for the time being, and appeared to accept groups on the best terms he could discover or invent to condone them.

Most of the generally admitted families of birds outside of the Passerines appear to me to be well founded, but I cannot regard the Oscine so-called families as such. The extremely trivial characters which have been used to discriminate them are not only insignificant when compared with those used by students of other classes to differentiate families, but they are insignificant even when contrasted with those used to distinguish families in other groups of birds. To entitle the sections of Oscines generally called families as such, is to obscure and falsify our knowledge of structure and to give a distorted idea of the group. The Oscines stand out as a remarkably homogeneous group of over six thousand species (more than half of the class), and thus contrast strongly with most other groups, whose representatives are few in number. To substitute the idea of number for morphology is unscientific and should not be encouraged by scientific men. Defense of the families has been made on the ground that because the species are so numerous, families should be made of the leading divisions. This argument is tantamount to the contention that the knowledge of the fact itself should be suppressed or disguised.

Objects should be called by their right names. If the groups in question are confessed to lack family characters, they should not be designated as families. Let a lesson be taken from other zoologists. There are families of insects the Carabids and Scarabeids among beetles, and the Ichneumonids and Chalcidids among Hymenoptera, for example—which contain nearly as many as or even more species than are known of birds, and yet there is no great difficulty in subordinating the constituent groups under a family designation. It is to be hoped that the Ornithologists' Union will re-open this question of classification and be guided by morphology and not by arithmetic.

Respectfully submitting this question of taxonomy to the examination of the American Ornithologists' Union, we may await their criticism until the time comes for us to act on the question. If decision should not be rendered before that time, we might take the initiative and evaluate the groups generally called families as subfamilies. Whether we will be able to recognize more than one family among the Oscines will be a question whose consideration we can also defer till it is time to act.

The chief objection to the degradation of the taxonomic rank of the Oscine group I have heard is that the term family is needed on account of the multiplicity of the species to be arranged. This, however, is no valid reason.

The entomologist has mastered the difficulty. The entire Oscine group, for the sake of argument, may be considered a family (*Fringillidae* if you will) and the primary divisions, generally called families, can be designated as subfamilies. The next divisions, generally denominated subfamilies, may then be called groups and given a name from the typical genera in a plural form. Thus we may have a family *Fringillidae*, a subfamily *Fringillinae* (family *Fringillidae* of most), and a group *Fringilla*. These categories, in my opinion, would be sufficient, but if others require more, they can still follow the entomologist and interpose between the subfamily and the group tribes and subtribes and even SUPERGENERA between a group and genera.

Some of the readers of THE OSPREY may think that these views as to the slight value of the characters distinctive of the so-called families of Oscines are peculiar to myself. Therefore I hasten to disown any claim to originality or to credit. Several of the masters of avine taxonomy have expressed similar opinions.

Alphonse Milne-Edwards, in preparing for his great work on fossil birds, was compelled to examine in detail the osteology of the class, and as a result he refused to recognize families among the Oscines. Huxley studied the osteology of birds with special reference to their classification and he also failed to distinguish families in the same group. Fürbringer, in his monumental work on the anatomy of the class, again combined all the Oscines in one family, for which he used the name *Passeridae*. Even in a faunal work, the same idea was accepted: Seebohm, in "A History of British Birds," named the group in question "Family *Passeridae*, or Singing Birds." Still more, he even carried into execution the suggestion that the so-called families should be degraded to the rank of subfamilies by actually doing so and designating the subfamilies "Turdine or Thrushes," "Sylvinae or Warblers," "Parinae or Tits," "Corvinae or Crows," "Laniinae or Shrikes," "Ampelinae or Waxings," "Sturninae or Starlings," "Fringillinae or Finches," "Hirundininae or Swallows," "Motacillinae or Wagtails," and "Alaudinae or Larks." It will be evident, therefore, that we have excellent precedents for the procedure recommended, and the reform already partly effected.

We may now turn from the high or super-generic groups to the low or subspecific.

SUBSPECIES.

There is a serious taxonomic problem that will confront us in the treatment of North American birds. Our ornithologists very generally have manifested a disposition to study the variations of species and to discriminate the variants as subspecies. There is a tendency in the same direction in other branches of zoology and by some it has been called the statistical method. It has been very recently employed in ichthyology. For example, Mr. Walter Garstang, of Plymouth, appears to have shown that there is an average of minor characteristics which differentiate the mackerels of different ranges as distinct races, but he has not deemed it necessary to name such races. Such studies are valuable and should not be decried. Nevertheless an instability is introduced in any group

in which undue prominence is given to such variations which is embarrassing. I do not see any end to such splitting, but an interminable number of subspecies looms threatening in the future. I would suggest that in the new ornithology a very subordinate rank should be given to the subspecies. The species might be described in generalized terms, that is, including all the variants, and the diversification into subspecies indicated in terse phraseology immediately after the diagnosis of the common characters.

This recommendation, I foresee, will not be acceptable to some, who would prefer to see subspecies treated in the same way as species. There are indications even that sooner or later someone will break from the ranks of trinomialists and return to the binomialists, giving regular specific names to what are now called subspecies. It has been held by most of our naturalists that the difference between species and subspecies is that the former do not intergrade and the latter do intergrade with others. There have been mutterings of dissatisfaction however with this view recently, and there is no telling when present restraints will confine no longer.

EXTRALIMITAL SPECIES.

I would also deviate from a custom that has been long fashionable in this country as well as in England, that is, the incorporation of accidental species with the legitimate fauna. The greed for foreign possessions that has been dominant in England for centuries, and that has now most unhappily extended to this country, has been manifest in the treatment of our fauna as well as in politics. Every poor wanderer, driven by adverse winds or some other calamity, is registered, as soon as identified, as a representative of the fauna. In England, where numerous collectors have been searching for rarities for many years, and which is favorably situated to receive and detain for a time such wanderers, a considerable percentage of the listed avifauna is constituted of such waifs and strays; in America, the percentage is increasing, but to a less degree. Such a procedure gives a wrong idea of the native fauna and of geographical distribution, and should be modified. Of course, the fact that a foreigner has wandered to the country should be recorded, but not in the same category as the natives. "One Swallow does not make a summer."

SYNONYMY.

The question of synonymy or bibliographical references may be considered next.

I fail to appreciate the usefulness of the repetition in every work of complete synonymies. Some time a brake will have to be applied and it might be done now. I would be disposed to restrict the references to the first describer of the species, the authority for the whole name adopted, Wilson, Audubon, Baird (1858), Cones (Key), Baird, Brewer and Ridgway, and the authorities for statements made respecting biographical details. Such references would be full enough for ordinary purposes. The investigator who wishes to trace historical facts in greater detail must know where to go to find the requisite information. Even the list here

given might seem to be a formidable one and inordinately long, but there are few cases where there would be independent references to so many authorities as are mentioned. Many of the species have been described since Wilson and Audubon, and even Baird, and one and the same authority may serve for the combination of first describer of the species and giver of entire name, and be also the author of one of the great works to be quoted.

SEQUENCE OF DATA.

The value of the new work will be greatly enhanced if the chapters or species are treated in a uniform manner, so that the inquirer may be able to turn at once to the place where he may find desired information, if it can be given. All of the American biographies are more or less irregular in this respect, and the information given is imparted in a "helter-skelter" manner.

The sequence might be somewhat like the following:

Diagnosis and description of the species.

Variation or subspecies.

Comparisons.

Distribution.

Migration.

Station; for example, whether occurring chiefly in woods or meadows, along shores, about water, etc.

Sociability.

Postures.

Walk.

Flight.

Voice.

Food.

Mode of feeding.

Mating.

Nest.

Eggs.

Incubation.

Young.

Moulting.

Age of pairing.

Parasites or companions.

I suggest this for consideration and criticism.

I would especially insist on the observance of a regular sequence for the presentation of data respecting habits, for the reason that most of the recent compilations on the American Avifauna err through the want of such observance. In most of them, the recorded observations are given in the form of notes on a species by various contributors, so that the same phenomena may be mentioned in half a dozen disconnected paragraphs in the history of one bird. What is wanted, *me judice*, is a concise statement of a phenomenon in one place so definite that we may at once turn to it. What Mr. Smith, or Mr. Jones, or Mr. Brown thinks of the habits of a bird—say *Caconymus mirabilis*—is of little moment to most of us. It is the history of the species in a logical and readable form that is desirable.

But let me not be misunderstood as deprecating information given in the form of abstracts from observing historians. Such abstracts I would esteem above all when the information depends on the superior powers or opportunities of observation of some one. Quotation, I think, is preferable for disputed facts or from a classi-

cal author—if the matter can be skilfully intermingled with the body of the history, without detriment to the harmony in style of the work.

In addition to these data, there are various species whose relations to man are such that they should be considered more at length. Information should be sought and given respecting their economic value, palatability, and mode of pursuit or capture.

GENERAL.

One of the difficulties we will have to meet is due to the great extent of our country and the consequent differences of seasons. I suppose we will have to be content for the present with the calendar times of immigration to and emigration from different regions, of egg-laying, and of moulting. But in the future, doubtless, we may have such phenomena connected with equations of temperature and other conditions, and from those equations may be deduced the consequences for any given area of which the temperature and correlated conditions are known. In other terms, the facts may be generalized; now they can be specified only.

Such a work as is contemplated must be to a large extent a compilation, and indeed its value will depend on the manner and extent of compilation. In other words, the method must *contrast* with that adopted by Wilson and Audubon. They depended almost entirely for their life-histories on their own observations. Now there are very few cases in which any one man can become acquainted through his own observations with all the facts relative to all or even many of the animals he has to deal with. Audubon certainly did not, and not one naturalist before or since has devoted the time or enjoyed conditions so favorable for observation as he did. Necessarily we must supplement our observations by those of others. Biographies so prepared, with the requisite weighing of evidence, comparison, and criticism, will be much better than the unaided observations of even a Wilson or an Audubon.

Special attention should be paid to style. A work may be scientific in matter and elegant in expression at the same time; scientific detail by no means excludes literary finish, but may be enhanced in value by such polish. Of our early predecessors, on the whole, Wilson's style is the best; Audubon's is too rhetorical and, I am almost inclined to add, too bombastic, to suit my taste at least. The best of all are the sketches by Coues.

HISTORICAL.

Collateral with the new work on North American birds, one on the history of ornithology in America may be published and may serve as an introduction to the systematic work. Therein the principal features of the works that have successively had their day should be given, and biographical notices of the authors and portraits of the principal ones may accompany the text.

WHO SHALL WRITE?

With some at least of the large number of ornithologists now living, we could co-operate, and we should welcome any who might be able

to contribute monographs in harmony with the plan determined upon. The elastic system adopted would enable us to publish a monograph of a genus or species when it was ready. The work should be subject to the direction of responsible editors, and none would be better qualified to undertake the task of supervision than the principal editor of *THE OSPREY*, who has himself published elegant biographies—the best in the language—in his “Birds of the Northwest” and “The Birds of the Colorado Valley.” I would therefore nominate him as one of the editors of the new work.

The names of the various contributors should appear on the title page as well as at the end of each article contributed.

I have written thus at length to open the way for the consideration and discussion of the advisability and method of preparation of a new History of North American Birds. I would like to add other details, but have already encroached too much on the present number of *THE OSPREY*. Meanwhile, suggestions, criticisms and information will be welcomed.

Yours very truly,
THEO. GILL.

A FRAUD LOOK OUT FOR HIM!

WASHINGTON, D. C., February 9, 1899.
EDITOR OF *THE OSPREY*:

For several months past an unscrupulous individual has been canvassing parts of Kentucky,

Ohio, Indiana, Michigan, Ontario, etc., offering to sell the publication called “Birds and All Nature,” or something of the same sort, and thus obtaining money from numerous people under false pretenses. The Chicago firm publicly denounce him as a fraud, and offer a reward for his arrest. He exhibits forged documents purporting to be signed by “Robert Ridgway, Regent Smithsonian Institute,” or “President National Science Association, of Washington.” He is described as a very plausible talker, using, or affecting, the Quaker dialect; is an elderly man with gray hair and beard, and has 2 or 3 fingers of right hand amputated at the first joint. He signs his name as Thos. (or Thos. S.) Cowley (or Crowley); sometimes as Thos. C. Ridgway, Sr., and in various other ways. His scheme is to obtain money in advance, and promise to send publications, which of course are never sent. Having received numerous complaints regarding the matter from his victims, I write to warn the public against him.

Respectfully yours,
ROBERT RIDGWAY.

[We have also received several complaints from victims of this person, have corresponded with the Secretary of the Smithsonian Institution and the publishers of “Birds and All Nature” on the subject, and are glad to open the columns of *THE OSPREY* to Mr. Ridgway’s letter, in hopes it may assist in stopping this fraud.—EDS.]

Pigeon Holes.

CAPTURE OF A SECOND SPECIMEN OF HARLAN’S HAWK, *Buteo harlani*.—On January 19, 1899, a farmer brought me a fine adult specimen of Harlan’s Hawk, a male. The bird was alive, having been caught by the toe in a steel spring trap, which had been set on the top of a pole. In this specimen the exposed (outer) webs of the tail-feathers were dark rufous, with heavy longitudinal blotches and streaks of blackish, the subterminal bar very indistinct, the streaks and blotches being somewhat heav-

ier. Tail white at base. Upper tail-coverts dark amber brown, edged with rufous. Life color of eye light hazel; cere yellowish-green—nearly “apple green.” Tarsi and toes dusky yellow. The only other notice of capture of this form in Illinois (to my knowledge) was that of the specimen taken here by me in March, 1879, as noted by R. Ridgway in Nat. Hist. Survey of Illinois, Vol. I, page 472.—CHARLES K. WORTHEN, *Warsaw, Ill.*

In The Osprey’s Claws.

BIRDS AND ALL NATURE.—We are informed that the stock and business of this unique periodical have been transferred to a new publisher, A. W. Mumford, 203 Michigan Avenue, Chicago. The features which made the magazine so popular will be retained under the new management; eight pages of text are added, and the brightly colored pictures continue to strike the eye. We believe that *Birds* has had exceptional success in the past, and seen no reason why it should not continue to delight many readers.

THE BIRDS OF ONTARIO IN RELATION TO AGRICULTURE. By Charles W. Nash. Published by the Department of Agriculture, Toronto, 1898. Large 8vo, pp. 32, pl. 32.

The author has pretty carefully digested a large amount of information in these few pages, taking up birds in groups, and giving their relations to agriculture from an economic standpoint. The tract is timely, useful, and should

do much good. Mr. Nash can write quite well about birds, but he should stop trying to draw them. Let him lay down his pencil and stick to the pen. The plates are the most ridiculous caricatures imaginable worse than the worst of our own government’s efforts to be ornithologically picturesque, which we have supposed until now to be as bad as possible. The brochure is handsomely reprinted from the Report of the Farmers’ Institutes of Ontario, 1897–8.—E. C.

BIRD-LORE.—A Bi-monthly Magazine devoted to the Study and Protection of Birds. Official Organ of the Audubon Societies. Edited by Frank M. Chapman. The Macmillan Co., Harrisburg, Pa., and New York, N. Y. Vol. I. No. 1. Large 8vo, pp. 32, with photographic plates. \$1 a year.

The appearance of this magazine realizes the expectations raised by the prospectus, which *THE OSPREY* cited last month. It is what the

boys call a daisy—dainty, even exquisite, faultless in typographical full-dress. It might have been called Bird-Love instead of Bird-Lore, or Agapomene; for it reminds us of a statement made in the Century Dictionary, that "the cherubs are distinguished by their knowledge from the seraphs, whose distinctive quality is love." If the numerous handsome advertisements displayed in this first number be real live ones, the success of the magazine is assured. The illustrations are the finest we have seen in any ornithological magazine; they approach the standard lately set up by the Kearton brothers, and we are left in no doubt of Mr. Chapman's practically inexhaustible resources for producing brilliant photographic plates. Regarding the other contents of the magazine, we are able to control our enthusiasm. The editor seems to be toying with ornithology in amateurish fashion, and will have to guard against dilettanteism, if he would not degenerate into mere prettiness or virtuosity. In the bird world, as elsewhere, Miss Nancy is to be shunned more sedulously than Mrs. Grundy is to be feared. At least, it seems so to us; though doubtless Mr. Chapman understands better than we do the class of customers to whom he caters, and is therefore the better judge of what they want.

The frontispiece is a portrait of the amiable gentleman who warbles pleasantly about Warblers in the leading article. Mr. Thoreau has been dead too long to be available now as a live fetish, and Mr. Chapman is wise in utilizing Mr. Burroughs for that purpose in the new cult of the kodak; the hermit of Slabside is said to have been worth a sale of 10,000 copies of Mrs. Doubleday's book. Mr. Torrey's turn should come next, and then Mr. Chapman should not forget the claims of Dr. C. C. Abbott. The body of the number is a good sound article on the use of the camera as an aid in the study of birds, by Dr. Thomas S. Roberts, fully illustrated with a series of half-toned Chickadees. Even prettier pictures than these are the ones by Mr. H. W. Menke, showing flocks of Horned Larks, Snowflakes, and Yellow-headed Blackbirds in wintry scenes. A children's department is appropriately opened by Miss F. A. Merriam, with text and plate alike suitable for the little ones. Notes from Field and Study are interesting and varied. Book News and Reviews are anonymous. There is much to be said for and against this. Some publications of the highest character in literature, science and art, prefer thus to sink the personality of the reviewer in the individuality of the periodical; others take the opposite view. Our own preference is for signed reviews, especially in a journal of any pretensions to scientific character. Possibly the very best course is a middle one, resulting in such a compromise as that, for example, made in *The Auk* and adopted in *THE OSPREY*, where signature by initials leaves a review theoretically anonymous, but actually of known or easily ascertained authorship. Mr. Chapman's experience as a reviewer and critic may make this department of his magazine a strong one, if he will vow from the start never to be mealy-mouthed about killing a book that ought to be killed, like that silly one by Mr. DeKay called "Bird Gods," which is very bad ornithology, and still worse philology and mythology. If

Mr. Chapman or his anonymous reviewer had understood how to handle this book, it would not have been only damned with faint praise—it would have been skinned alive, and its hide hung on the fence to dry. Lastly, Mrs. M. O. Wright upholds Bird-Lore as the organ of the Audubon Societies, and plays upon this instrument in her usual vivacious manner, giving a directory of the various State organizations for the protection of birds, and official reports from some of them. The magazine is so largely devoted to æsthetic, sentimental, and humanitarian aspects of ornithology that she cannot be too careful in consulting the fancies and cultivating the good graces of these societies, from which probably the greater part of the cash receipts is hoped to derived.

Bird-Lore sets forth bravely and handsomely on its artistic and benevolent mission, likewise with our heartfelt compassion. We bid it God-speed, and shower rice upon the happy wedding of modest ornithology with brilliant typography. The magazine is already a thing of beauty—may it become a joy forever! If it continues to prosper, as we have no doubt will be its happy lot, Mr. Chapman will win with the camera and opera-glass a halo of radiant amateurishness which may fit him as well as that laurel wreath of the professional ornithologist already earned with the shot-gun, scalpel, and egg-drill. — E. C.

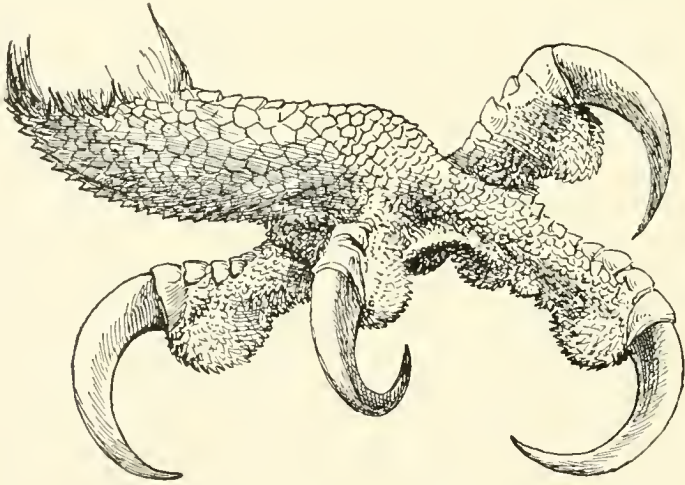
BIRD WORLD.—A Bird Book for Children. By J. H. Stickney, assisted by Ralph Hoffman. Boston: Ginn & Co., 1898; pp. x, 214. Cloth.

So long as children have to go to school they must have readers. What can be better than such books as will teach them to see and study the nature that is all about them, full of interest and entertainment for all who will try to understand—yet so few try! We endorse all efforts to teach children love and friendship for birds and all animal life. An evidence of growing interest in these beautiful objects is apparent in the increasing number of bird books—and the more the better, for there is sure to be found some good in them all. We hope each one will help to awaken young minds, inspire them with kindly feelings, and thus make many new friends for the birds. The more friends the more protection; and the more protection the more birds to delight us. If each book brings some new recruits to our ranks, let us hail each book, and hope that even though it should be a poor one, it will lead to the search for a better one. Most people know a good thing when they see it.

In Bird World we have a pretty carefully gotten up little book, designed as a reader for intermediate grades. We should hardly call it that, as the kind of ornithology it teaches is best fitted for minds too young to use the book profitably. It belongs to the primary grades of a words-in-one-syllable reader. Yet it has many interesting little anecdotes of birds and their doings, which will attract any child who is able to read them. The chapters lead us hither and yon on the borders of bird land, in very desultory fashion. Now we are introduced to the Yellow-throated Vireo at home, now an effort is made to interpret the unrivaled song of the Brown Thrasher: here is a chapter on feathers, there one on beaks, toes or what not. The book is

fully illustrated, and some of the pictures are better than the text. The best are of course those by Mr. L. A. Fuertes, and we happen to know that it is not the fault of the publishers that they have been used without his permission. The next best are Mr. Thompson's, always good character studies, never failing to give pleasure. The worst are those derived from some government publication, in not one of which did we ever yet see a good bird picture. The ones which are best suited to the book, being those which will catch a child's eye, are the colored plates derived from the Chicago publication, "Birds." An appendix gives a key to a few birds grouped by color—better not have any such key in a book like this— and a list of various New England birds grouped by the places in which they may be found. The most serious fault of the book is the very great number of loose, vague or wrong statements it

makes about birds. It is all very well to plead that the whole truth cannot be taught to children, but that does not condone positive untruth. For example, on page 152, the number of species of Hummingbirds is said to be "over a thousand." If the author had consulted any authority, she would have discovered that not half that number are known. And why does she speak of birds as being "born," when the exactly right word for the way birds come into the world is *hatch*? Children might as well be taught to use the right words in the right places. The author does not seem to us to know enough about birds to teach children ornithology, and not well posted on the authorities to which she might turn for information. For example, she does not seem to know who are the authors of *Citizen Bird*, and perhaps never saw that best of all books for children.— J. C. B.





GULLS FLYING AGAINST THE WIND.—Instantaneous Photograph by B. Wyles.

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AN ILLUSTRATED MAGAZINE OF POPULAR ORNITHOLOGY.

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BEHIND THE WEDDING VEIL.*

By JULIA STOCKTON ROBINS, Philadelphia, Pa.

Alexander Wilson, as the author of the "American Ornithology," is familiar to all of us, but how many people know anything of him as a man? There was a romance in his life that two of his most prominent biographers do not even mention. I refer to his love affair with Ann Bartram, a brief account of which appeared in the Philadelphia Sunday Press some years ago. She was the granddaughter of John Bartram, the botanist, and the niece of Wilson's friend, William Bartram. She is described as being "slenderly built, with brown hair and expressive eyes." Alexander Wilson was teaching school at Gray's Ferry, a short distance from the famous botanical gardens, where the Bartrams lived, and what was more natural than for him to fall in love with this charming young Quakeress? Apparently Miss Bartram had no objection to this, and had her course of true love run smoothly, we might never have had the "American Ornithology." Fate, in the shape of a father, overburdened with common sense, suggested that a poor school teacher was no match for his daughter, and sternly refused his consent. It seems as if Ann must have been lacking in spirit, that she did not make more of a fight for her lover; but we can not tell what influences were brought to bear on her feelings. For one thing, the friend and staunch upholder of the young couple, Dr. James Bartram, Ann's brother, was absent from home, and, lacking this moral support, she was unable to resist the parental authority. In 1805 she was persuaded to marry Colonel Robert Carr, then a well-to-do printer on Second street, below Market, Philadelphia. When Dr. James Bartram returned home he was exceedingly angry, and positively refused to speak to Col. Carr. Mrs. Carr lived for many years, but it is to be supposed that she never quite recovered from her early disappointment. She must have often heard of Wilson's great work, and perhaps felt a pang of jealousy when she thought of the birds that at least filled his life if they did not entirely console him for her loss. She died at Beverly, New Jersey, on October 30, 1858.

But to return to Wilson. After his sweetheart's marriage in 1805, he apparently began to think seriously of ornithology as a profes-

sion. He wrote to William Bartram, and said, "I dare say you will smile at my presumption when I tell you that I have seriously begun to make a collection of the drawings of birds to be found in Pennsylvania." From this time until his death, which occurred seven years later, his whole time and thought were given to this absorbing work. Of course, it was absolutely necessary for him to have bread to eat; he, therefore, procured a position in Philadelphia with a firm of booksellers, Messrs. Bradford & Co., where he was employed as assistant editor for a new edition of Rees's Encyclopedia. The salary was higher and the work less arduous than that of school teaching, and every spare minute was devoted to his book. He burned his candle at both ends, and by the light of it wrote the biographies of birds and painted their portraits. At first he tried to be also his own engraver, but failed in that attempt, and gave it over to Alexander Lawson.

It occurred to me not long ago that it would be interesting to know what the newspapers had to say about Wilson in the way of obituary notices. A careful search revealed very little.

In the United States Gazette for August 23, 1813, I found the following: "Died, this morning, Mr. Alexander Wilson, author of the American Ornithology. His friends and acquaintances are invited to attend his funeral, from Mr. William Jones', No. 223 Spruce street, Philadelphia, at 9 o'clock to-morrow morning."

In the American Daily Advertiser for August 24, 1813, there is much the same notice, except that an extract is given from the minutes of the Columbian Society of Artists, in which they resolve to "wear crape on the left arm for thirty days, in testimony of the high consideration the virtues and talents of the deceased are held by the Society." That is all. Fancy one of our modern papers allowing a great man to die without giving him at least a column and a portrait!

There is little left to remind us of the love affair between our pioneer ornithologist and Ann Bartram. Even their letters, which, at one time, were in the possession of William Middleton Bartram, were borrowed by a friend and have mysteriously disappeared. But "The

Beechen Bower" is fortunately preserved, and I copy it from a photograph of the original manuscript in the possession of Dr. Coues:

THE BEECHEN BOWER.

O, dear to my heart is this deep shaded Bower
This snug little seat and this smooth Beechen
tree
These old hoary cliffs through the bushes that
tower
And bend o'er the pool their resemblance to
see
The fountains the Grotto the Laurel's sweet
blossom
The streamlet that warbles so soothing and
free
Green solitudes! dear to the Maid of my bosom
And so, for her sake, ever charming to me

Here seated with Anna what bliss so transporting

I wish every moment an age were to be
Her taste so exalted her humor so sporting
Her heart full of tenderness virtue and glee,
Each evening sweet Bow'r round thy cliffs will
I hover
In hopes her fair form thro' the foliage to
see
Heaven only can witness how dearly I love her
How sweet, Beechen Bower, thy shades are
to me.

[Signed] A. WILSON.

January 18, 1804.

*[This title is modified from "Behind the Veil," of Dr. Coues' gossip over *Wilsoniana* in Bull. Nuttall Ornithological Club, Vol. V, No. 4, Oct., 1880, pp. 203-204, in which article was first published the poem now reprinted. It is evident that the "Anna" of "The Beechen Bower" was no other than Miss Bartram.—Eds.]

AN OLD CASE OF SKINS AND ITS ASSOCIATIONS.

By WILMER STONE, Academy of Natural Sciences, Philadelphia, Pa.

To those who were acquainted with the late Prof. E. D. Cope, his museum on Pine street, in Philadelphia, was familiar. A dwelling house, practically unfurnished, but crammed from cellar to garret with "specimens" of every description—though mainly fossils—cretaceous, eocene, miocene, as the case might be, but all covered with a distinctly post-glacial stratum of dust. The magnificent array of fossil rhinoceros skulls which adorned the one-time dining room never failed to attract the visitor's attention, and scarcely less interesting were the gigantic saurians which found lodgment in the parlor.

For me, however, an oblong yellow case, in one of the upper rooms, possessed an attraction exceeding that of any of these monsters of the past. This contained what was known as the Turnbull collection of bird-skins, and a hasty glance into the drawers on one or two occasions in the professor's company only made me long for an opportunity to go over the contents more leisurely.

Such opportunity has lately been offered, as, by the generous provisions of Prof. Cope's will, the old yellow chest, along with many other valuable collections, became the property of the Academy of Natural Sciences of Philadelphia, and is now before me.

So far as can be ascertained, this little collection of some seven hundred skins represents the combined efforts of Bernard Hoopes and Chas. S. Turnbull, members of the Academy's Ornithological Committee in the 60's.

Owing to the fact that neither *THE OSPREY*, the Auk, nor the A. O. U. existed in their time, the names of these collectors are not generally known to ornithologists of to-day, though Hoopes will be remembered as the describer of Krider's Hawk, and Turnbull as the author of an admirable List of the Birds of East Pennsylvania and New Jersey (1869), probably the best local list that had appeared up to that time.

Most collections, sooner or later, find their way to some large museum and lose their iden-

tity. We are, therefore, unable to see them as they were left by the "bird men" of earlier days. It is with peculiar interest that we now examine these skins, and a feeling of close contact with the past can not be suppressed.

This lot was probably one of the first "skin collections" in the country. The idea of having all specimens mounted was still dominant in Cassin's time, and Prof. Baird, who was about contemporary with the makers of this collection, is credited with forming the first extensive collection of skins.

Perhaps the first point that we notice in these specimens is the great lack of definite data. To these early ornithologists the name of the bird seemed the all-important fact to place on the label. To-day it is just the reverse; we hasten to inscribe exact locality, date, sex, etc., leaving the name for the last, perhaps because we fear it will be changed by the A. O. U. Committee before we get it written! A few of Prof. Baird's skins which found their way into the collection are, however, carefully labeled with full data, and serve as an illustration of the excellent example which he set in this matter. One of the first birds which strikes the eye is an Ipswich Sparrow (*Passerculus princeps*), unfortunately unlabeled, but placed aside by itself as evidence of the perplexity it probably caused. This specimen was taken before the type had been secured by Mr. Maynard, and is probably the first one obtained since the time of Alexander Wilson. (See *OSPREY*, ii, p. 117.)

Then there are specimens of most of the western Woodpeckers—great prizes at that time, to judge from the notes on the back of the labels, as, for instance, "*Colaptes chrysoides*, Rare!" and "*Picus albolarvatus*, very Rare!"

The array of Warblers is exceptionally fine, when we consider the time at which they were collected. Fifty species are represented, more than two-thirds of all the forms recognized to-day. Among them are specimens of the Olive, Hermit, Swainson's, Grace's, and last, but not least, the famous Townsend's Warbler.

from Chester county, Pa., shot by "Chris." Wood, the Philadelphia taxidermist, whose name is connected with so many noteworthy captures, some twenty-five years ago. There were several of the Wood family among the earlier taxidermists of Philadelphia, and some of them did considerable important collecting in the West and South, notably on Lieut. Michler's Panama expedition.

Another name which appears on quite a number of labels is that of John Krider, the most famous of Philadelphia's birdstuffers and gun-makers, whose old shop at Second and Walnut streets remains practically the same to-day as it has been for the past half-century or more; but though the old sign still hangs over the door, there is no longer a Krider in the firm. *John Krider was an ornithologist of no mean ability, and had had personal field experience with most of our birds occurring east of the Mississippi, but, like all the older taxidermists, he kept no notes and rarely labeled a specimen, trusting wholly to his memory, which seems to have failed him sadly when in his declining years he prepared his only publication. However, it is gratifying to know that his name will be perpetuated in *Buteo borealis krideri*, his most important discovery.

Several specimens are from the collection of John Cassin, and quite a number of determinations have been verified by him.

Some of Cassin's peculiarities are shown in his labels, which are generally full of detail and not infrequently include wholly superfluous contemporaneous matter.

The mounted specimens in the Academy's collection often bear on the base of the stand his initials and the date upon which the bird was identified! Sometimes more minute data are added, as, for instance: "This bird was labeled by John Cassin on Thanksgiving Day, 186- , at 5.30 o'clock in the evening;" and, in another case, after the date appears: "News has just arrived of the downfall of the French Empire—Vive La Republique!" The host of unlabeled specimens in the Turnbull collection doubtless possess facts of fully as much interest as those to which fragments of historic matter are attached, and it is unfortunate that their secrets must remain forever hidden. There are some birds whose rarity at the time of their capture must have made them objects of the greatest interest, and a few lines on the history of their capture and the lucky collectors of olden times who secured them would make interesting reading to-day.

[*I remember going through Mr. Krider's collection about thirty years ago, and among specimens I did not recognize was a large Hawk from Texas. This, as I now know, was *Buteo allicaudatus*, which might have been then introduced to our fauna, many years before it actually did enter our list.—E. C.]

SNAP SHOTS WITH PEN AND CAMERA.

By EUGENE S. ROLLE, Minnewaukan, N. Dak.



Ferruginous Rough-legged Hawk, from life, age about 6 or 7 weeks.

FERRUGINOUS ROUGH-LEGGED HAWK.

The pair of young Rough-legs shown in the illustration were taken from a characteristic nest among boulders on the crest of a stony knob in wild, unsettled country. They were

then but a few days out of the shell. Speedily overcoming their fears, they had become, at time of photographing, much like domestic fowls, surpassing the latter, even, in their indifference to being handled.

As the rancher who had these birds called them "Bald Eagles," his price for the pair was \$10, and failing to make a sale, he was somewhat reluctant to suffer their pictures to be taken. I judged he had some vague, uncertain notions as to copyright, and wished "all rights reserved!"

SHORT-EARED OWL.

A hobo, camped near town with others of his class, sold me this bird for 25 cents. He claimed to have shied a stick at it as it sat beside the railroad track, and slightly stunned it. On taking it from the big box cage, which it occupied with a family of young Burrowing Owls, and posing it on a boulder for its picture, it very accommodatingly raised its "horns"—the only occasion on which I had observed it do this. I suspect that the injury it had received at the hands of the hobo was serious, for it never exhibited the usual spirit of its species, and one morning it lay dead on the ground floor of the cage, with a howling young Burrowing Owl perched upon its body.

[WESTERN NIGHTHAWK.

The patience necessary in photographing birds in a wild state is illustrated here. Observing a Nighthawk sitting on the top of a

post in a barbed-wire fence, I dropped on hands and knees and stole toward it with the bellows of a camera pulled out to the 10-foot mark on the graduated scale. On being approached within forty feet, the bird flitted ahead, alighting as before some rods further on. Following carefully and with painful slowness, I reached a point within twenty-five feet, when it flew ahead as before. This time it suffered approach within perhaps twenty feet. Then followed a weary succession of creeping approaches on my part and retreats on the part of the bird, until full a mile of fence had been followed up before the necessary approach within ten feet was achieved. As the camera was snapped when held close to the ground, and while pointed upward at a moderate angle, the effect of the fence-post in the picture is somewhat that of a telegraph pole.

CLAY-COLORED SPARROW.

A shoemaker came to my house in breathless haste one day last fall to announce the capture of two "Graybirds." It seems that the sparrows, while apparently playing "tag" on their way through town, had darted in the open door of the shop, and then the proprietor hastily closed it. Capturing the birds in hand, they were placed together upon a box, and with a thread wound round a leg of each and fastened to tacks driven into the wood, their portraits were obtained.



Nest and Eggs of Prairie Horned Lark.

PRAIRIE HORNED LARK.

If the nest situation alone were taken into consideration, the bird responsible for the nest and eggs here shown might fitly be called Desert Horned Lark, the location being in the midst of a desolate alkali waste formed by the drying up of an arm of Devil's Lake. But, perhaps, the books are right; all the perplexing forms of *Otocorys alpestris* are valid, and we have in this region as a summer resident only the subspecies *praticola*. I wonder, however, if there is in the United States a single man sufficiently skilled to identify, just exactly as the A. O. U. Committee would do it, a dozen different specimens of the Shore Lark, taken at random throughout the country.

BAIRD'S SPARROW.

It has been observed that this Sparrow is very local. I know two strips of prairie where *Passerculus bairdi* may always be found in profusion during the summer, while in contiguous territory exactly similar in character and vegetation the bird is almost never observed.

In my judgment one familiar with this species should never find it necessary to shoot a parent for the purpose of identifying the nest. The male is in such close and constant attendance, and his song—aptly described by Dr. Cones in the Key—is so oft-repeated and so absolutely distinctive, that the evidence offered by the female and the nest and eggs themselves is simply cumulative.

No one needs the camera that will reproduce in natural colors more than the student of bird life. These eggs represented here so soberly were, in fact, a beautiful crystal-white, with rich, bold spotting and blotching of bright, reddish-brown. They are now in the collection of Thos. H. Jackson.



Adult Western Night Hawk, from life.



Clay-colored Sparrows, from life—fall plumage.



Adult Short-eared Owl, from life.



Nest and Eggs of Baird's Sparrow.

THE GOURDHEADS IN THE CYPRESS SWAMP OF MISSOURI.

By OTTO WIDMANN, Old Orchard, Mo

If you draw a line from Cape Girardeau, on the Mississippi River, southward to Poplar Bluff, on the Black River, you have the northern boundary of a region entirely different from the rest of the State of Missouri. It is generally known as the Swamp Counties. Those who have land for sale or rent in the region prefer the more inviting appellation, Alluvial Counties, while the natives often refer to it as the Gumboot Counties, because gum, i. e. rubber boots are worn by them for at least six months of the year.

Schools and book stores are not thick in the Gumboot Counties, and it is, therefore, not to be wondered at that in naming objects of natural history they show a peculiar talent for the application of misnomers.

That they call every water-snake a moccasin, and the tulip tree a poplar, is pardonable, but the confusion among bird names is too perplexing.

When they speak of a Water Turkey you may be sure they mean a Cormorant, and when you show them what others call a Water Turkey, an Anhinga, they are apt to call it a Loon. When they tell you that they have shot a

Water Hen you do not know whether it was a King Rail, a Least Bittern, a Gallinule, a Coot or a Grebe. Bitterns and Night Herons are Big Water Hens. Of course, all are eaten, as well as all kinds of fish. Herons are Cranes. The American Egret is the White Crane, but when they are confronted with a real White Crane, *Grus americana*, with his red cap and mustache, they are at a loss what name to give. White or Whooping Cranes are not often seen in that heavily wooded region, but thirty years ago Dr. Cook, of Cottonplant, winged one not far from his house on the so-called Grand Prairie of Dunklin county, and when I last visited his place, two years ago, the Crane was still alive. He has the freedom of the barnyard and lives and feeds with the fowls, mules and cattle. All the animals are afraid of him and go out of his way; if they do not, he begins to dance and makes such queer antics that they are glad to get out of his reach. Well, what do you think I heard them call this bird? A Stork. Some names are really funny. The Pileated Woodpecker, a common bird in those primeval forests, is the Good God, and the other Woodpeckers are Peckerwoods.

But one of the funniest is the Gourdhead. It is not a sobriquet, but the universal and only name of the Wood Ibis, *Tantalus loculator*, which is a regular summer visitant of the region, and not only locally common but very conspicuous—in fact, quite a feature of the landscape from July till September. They come in troops of variable size, and to see such a troop, say eighteen or twenty of these big birds circle after the fashion of the Turkey Vulture, with hardly any wing beats, high up against the bright blue sky, for an hour at the time, is really a fine sight. Thus sailing, with their long-stretched legs and neck, black wing-tips and white plumage, they remind one strongly of the European Stork.

Like the Turkey Vultures, and often in their company, they do their soaring mostly in the forenoon. When not thus employed, you will find them sitting or standing in most picturesque groups on the dead branches of a tall lone cypress; or, if you push your dug-out into the dense growth of the flags, you will startle one or the other from their wading exercises in the shallow water, and you will hear his angry croak.

At the time of their visit the stage of the water in the sloughs and rivers is at its lowest, and plant growth has become so thick that only a narrow passage in the main channel is left open, hardly wide enough for a dug-out; all the rest of the wide expanse of water is entirely overgrown with a variety of aquatic plants. Thick masses of "moss" (*Myriophyllum*, *Ceratophyllum*, *Cabomba*, *Utricularia* and others) impede the current, and various kinds of "duck meat" (*Lemna*, *Spirodela*, *Wolffia*) cover large areas of the surface and attach themselves to the moss below. The current itself is hemmed in by a band of smartweeds, *Polygonum*, mainly *densiflorum*, which, in its turn, is bordered by the "flags," the region next to the cypress, and often set off from them by a tangle of climbing hempweed, here called buckvine, *Micrantha scandens*, the only climbing genus of the *Compositae*. For the botanist these bankless water courses are a rich field for study, as he finds here interesting representatives of various floras, and of all sizes from the giant *Taxodium* down to the smallest of phanerogamic or flowering plants, the rootless *Wolffia*. It is the meeting point of northern offshoots of the Floridian and Texan floras, and the first impression a visitor from the North receives is that of strangeness of many individual plants and the general novelty of the scenery.

One of the most common plants of the so-called openings, i. e. lakelike widenings of the riverbeds, is the chinquapin, here called toncabin, the American lotus, *Nelumbo lutea*. It is an old acquaintance of ours, growing plentifully farther north, but in its new surroundings it gains additional interest by its greater luxuriance, presenting leaves of over two feet, and sweet-scented flowers of over eight inches in diameter. Such a blooming *Nelumbium*-bed, with its rich green, floating leaves and soft yellow blossoms, is by itself a beautiful sight, but it becomes perfectly charming to the lover of nature when animated, as we often find it

here in August, by an interesting and lovely bird visitor from the South.

It is the elegant graceful form of the horned Little Blue Heron, *Florida caerules*, in pure white plumage, who invades the swamps of southeastern Missouri in numerous troops of various sizes. At a distance they may easily be mistaken for the Snowy Heron, *Garzetta candidissima*, being almost of the same size; but, when sufficiently close and in good light, we see the distinguishing characteristics of the species—legs, feet and lores yellowish-green, and wings tipped with slate. This latter feature is not easily seen except when the bird opens its wings; it is also variable in extent and shade; some have it very distinct, in others it is hardly noticeable except in the best of light.

Born and reared in the uninhabited swamps of the South, they are singularly unsuspicious visitors, and I am afraid many fall victims to the cruelty of man before they learn to be more cautious, though I do not see how a man can find pleasure in destroying such a lovely, harmless creature. They may catch young fish and minnows at some season, but they do not come to Missouri as professional fishermen. The chief attraction seems to be the bell-frog, *Lyla carolinensis*, a little fellow, only $1\frac{1}{2}$ to 2 inches long, which spends much of its time sunning and fly-catching on the lotus. When sitting on these large, floating leaves, which shield them from their enemies below, they seem to have but little harm to fear and, unsuspecting, fall an easy prey to the hungry visitor from the South.

On nimble feet, the slender bird treads gingerly from leaf to leaf, but often in his zeal to make a catch he steps too far out on the rim, which sinks and leaves him swimming in the water. With his long legs he grapples with the leaf and struggles hard to get on board again. It is a most amusing sight to see him sink repeatedly, until the center of the leaf is reached, where the supporting stalk will bear his weight. Wherever the floating leaves do not overlap, the bird is forced to take short flights, and on alighting, keeps his wings partly unfolded, ready to escape, should no firm stand be secured.

Thus a small troop of fifteen to twenty birds can do a large tract of lotus in a remarkably short time. Arriving at the end, all take wing at once and strike out for another patch. When their hunger is appeased, an insular clump of trees invites them to a prolonged and undisturbed rest. Sometimes they do a little circling and soaring with the Gourdheads, but when going any distance they arrange themselves into a migratory wedge and proceed in a straight course at no great height, sometimes barely skipping the highest tree-tops. Old birds are rare, keep separate, and are quite shy.

When the noon sun spends its force upon the marsh, all nature seems to rest and silence reigns supreme. The song birds, which, even in August, are quite noisy for a few hours in the early morning, are neither heard nor seen; they have disappeared as if by magic. Once in a while a Florida Cormorant will rise and

disappear behind the slender cypress trees that wall the water on both sides. Or a Mississippi Kite puts in a short appearance in search of prey. We see him swoop and turn and dodge, much as a Nighthawk does, and then reach down his head to meet the claws that hold the prey, and, while still on wing, continuing his flight, he dresses cleverly his game and eats it at pleasure.

Long before the sun has set the scene is changed. The song birds are awake and sing once more; Flycatchers are busy plying their vocation; Blackbirds have left their distant feeding grounds on cultivated land and come in flocks to go to roost together; Wood Ducks and Hooded Mergansers dart over and through tree-tops to visit favorite feeding grounds, and small troops of Swallows pass by, heading for the common roost in flocks. At one of the lake-like openings, a large number of Swifts are flocking. Hunting diligently and crossing each other's path in endless repetitions, they fly low above the water, which is filled with plant-growth. Two species of *Utricularia* or bladderwort send their golden yellow flowers to the surface from their floating plant below. More resembling scum than vegetation swims *Azolla* Carolina on the water, and the pretty *Jussiaea* shows its yellow blossoms over rich green leaves on reddish stems.

More Swifts have come; thicker is the bust-

ling crowd; more and more do they extend their circles into the direction of an old tupelo, *Nyssa aquatica*, which is growing in deep water, and, though half gone with age, bears leaf and fruit, and on its bulging, solid base seems to defy all elements and time.

As night draws near there is a wild and whirling sweep of noisy Swifts around that picturesque, amphibious, vegetable wreck, and the descent in its capacious hold begins. Twenty-five feet above the water the top is broken off, giving access to an empty space of 25 feet depth and of conical shape, 1 foot wide at the top and 3 feet at the bottom. In this the Swifts are disappearing, first singly or in twos, then in bunches, and at last in a continuous stream. There are some stragglers left, but, when nearly dark, the last one follows suit.

This watery region is a great place for the Swift, and the tupelo is its home. The water-loving tree is always more or less hollow when old, and broken tops or limbs afford ingress for the bird, who can not wish a safer place for nest and roost. Snakes, owls and a few mammals would be the only enemies likely to molest them, and to avoid them, as well as to be in the dry, the nest is fastened deep down near the bottom of the cavity, being actually found as far as twenty feet below its mouth.

ODD ACTIONS OF BIRDS UNEXPLAINED.

By W. B. DAVIS, Union, Oregon.

One who is in any way interested in birds or animals can not fail, as year after year is added to his experience, to catch some glimpses of their inner life. If he only occasionally finds time to ramble in the fields these revelations may be few and far between, but in any case they are not likely to be soon forgotten. In three instances I have seen actions of birds which, while peculiar in themselves, are more memorable as hints of unsuspected things in their everyday lives.

The first was an aerial feat performed by a large Black Woodpecker. The self-satisfied indifference of these birds makes them always interesting. They have a faraway look in their eyes that immediately shows them to be no ordinary fowls. This one in particular seemed to be blessed with a more than average mind. It was on the side of a steep hill, one hot summer day. The Woodpecker flew out from the top of the hill, toward the valley. He struck out so boldly, not descending at all in his flight, that I wondered if he intended to cross over to the opposite side, a distance of several miles. I dropped the butt of my gun on the ground and watched him. Suddenly, when he had flown so far out that the rocks were many feet below him, he turned shortly, stopped his onward flight, folded his wings and fell. His stiff black body was clearly outlined against the sky as he dropped. Down, down, down, faster and faster he went, until I expected to see him strike the ground. But just before he reached it he spread his wings and shot forward like a bullet. After this he flew back up the hill into the timber. What was his object

in this performance? Did he start to cross the valley and then change his mind, or did he fall simply for the pleasure of falling?

A still more surprising and unaccountable feat was performed by a common Sparrow Hawk. Another person and myself, on hearing some strange screams while working in a field one day, turned and observed this hawk flying toward us. He was not flying very high, and we had a good opportunity to watch his strange antics. At every third or fourth beat of his wings he would turn completely over in the air. He turned sideways, always from left to right. As he necessarily fell some in turning, and rose again after he had regained his equilibrium, his flight proceeded in a series of jumps, reminding one of the flight of a Woodpecker or Goldfinch, although, of course, much weaker. Our theory that he was wounded was frustrated, partly by the regularity of his movements and partly by his stopping his strange actions after he was some distance past us, and flying off as a well-regulated hawk should fly. We watched him until he became a mere speck in the sky and finally vanished, and at no time did he act as though he did not have complete control over his body.

At another time, as I was going through some thick timber, I came to a small opening, which formed a bright, warm spot of sunlight in the universal shade. As I stepped to the edge of the opening I perceived a small bird fluttering in the air. As birds are not given to such performances entirely without cause, I inferred that there was a "method in his madness," and my faith in that conclusion was

materially strengthened later by the discovery of a swarm of flies in his neighborhood. But there was even more method than I had suspected. On the ground in the center of the opening lay a smooth weatherbeaten slab, the top of a log that had rotted there. To this he took the flies he caught and laid them down in a straight row. He kept adding to one end of this row, laying the flies equal distances apart. He was so absorbed in his occupation that he was oblivious to everything else, and I watched him some time unobserved. I finally backed carefully out of his sight and left him at his work. I have regretted since that I could not have watched him longer. This incident is full of suggestions. Why did he put the flies in a straight row? Did he do it unconsciously or had he grasped enough of the idea of curves and straight lines to voluntarily form them? Could he count them or form any idea as to the number he had? Why did he lay them there at all? Possibly he wished to take them away somewhere and was afraid that if he took them one at a time, as he caught them, the

swarm would be gone when he returned. He might have been making hay while the sun shone. These and many more questions might we ask about his capabilities, about his whole life, in fact, a glimpse of which he had so unconsciously given.

These instances, apart from their oddity, impressed me with the idea that there is more in the lives of birds than we imagine. The old Black Woodpecker not only showed his skill in a beautiful feat of flying, but also gave us a hint of a "higher education," gained some time, somewhere, somehow. If his life could be watched from day to day it might furnish material for another such biography as "Silver-spot, the Crow." And one who questioned the value of scientific ornithology and laughed at "bird study," would still, I think, feel some sympathy with the little bird working on his row of flies. It is such things as these that lend fascination to nature study, and make the enthusiast "go at it" like the small boy into his first love affair as though no one had ever been in love before.

SOME OF OUR WINTER BIRDS.

By M. A. CARRIKER, JR., Nebraska City, Neb.

One sunny afternoon in early February, while strolling through a strip of woodland, bordering on a small creek, I was more impressed than ever before with the number and variety of birds, large and small, which remain here to face the rigors of our Nebraska winters.

Along the outskirts of timber, and among the dead weeds and tangled grasses of dry ravines, several species of Northern Sparrows and the Slate-colored Junco (*Junco hiemalis*) may be seen flitting about in their restless manner from weed to weed in search of seeds, while clinging to a naked weed-stalk the cheerful little Chickadee (*Parus atricapillus*), or the stoical Downy Woodpecker (*Dryobates pubescens*) beats a lively tattoo in his search for the little grubs which he knows are hidden within.

While I cross an open field I most likely send a flock of Horned Larks, which have been feeding there, whirling away on their peculiar, undulating flight, to drop suddenly on the crest of the next hill, where they resume their interrupted search for their noonday meal.

Passing on, I start through a patch of thick hazel brush, when just in front of me suddenly appear several flashes of brilliant scarlet, and as suddenly they are gone. Silently I watch the place where they disappeared, and soon I see a pair of beautiful Cardinals (*Cardinalis cardinalis*) stealing away among the bushes in their peculiar manner.

Pushing my way through the brush, I come suddenly upon a flock of eight or ten Robins (*Merula migratoria*) scratching among the leaves in an open place. With a chorus of startled twitters they are swiftly on the wing and away.

Entering the woods, a loud and vigorous rapping attracts my attention. Advancing stealthily in its direction, I all but surprise a large male Hairy Woodpecker (*Dryobates villosus*) digging in a decayed limb of a wild

cherry tree; then, with one startled glance in my direction, he takes to wing and his beautiful black and white-barred wings and scarlet nape are soon lost to sight among the trees.

Coming to a hollow tree, I explore for a stray Opossum, which may have taken up its abode there. As I bend over to examine the entrance in search of the tell-tale hairs which it always leaves, something drops from above and goes past my face with a suddenness that sends me sprawling on the ground from fright. Looking up for the cause of my downfall, I see a Flicker (*Colaptes auratus*) flying away with a speed that shows I am not the only one frightened. While picking myself up, a pair of the ever-present and insolent Blue Jays (*Cyanocitta cristata*) give vent to their feelings of delight over my mishap in loud notes of "dew-ay, dew-ay! dew-ay!"

Passing into heavier timber, I flush a Barred Owl (*Syrnium nebulosum*) from his retreat in a vine-covered tree, and before he has gone a hundred yards a flock of Crows, which had, no doubt, been hunting him, pounce down upon him with exultant caws, happy that they can make life miserable for something for a short time.

On arriving at the top of a hill, panting from the hard climb, a magnificent *Buteo borealis* rises from below and sails upward, circling majestically above me till satisfied as to my identity, then dropping over the next hill to join its mate.

At last I come to the object of my trip. On the side of the hill above me stands a large cottonwood tree, with a huge, unshapely nest resting in one of its forks. Approaching closer, a round object, with two projecting horns, rises from the nest, and the next moment a huge mottled bird sails noiselessly away. After adjusting my climbers, I slowly ascend the huge trunk, and at last, nearly out of breath, I reach the nest. I can hardly get

above it, it is so bulky, but at last I succeed, and am amply rewarded for my toil by what I see. Resting in their bed of grass and feathers are three fresh eggs of the Great Horned Owl (*Bubo virginianus*)—an unusually large set. While I carefully pack them in my

box, the female, now joined by the male, sits at a safe distance and watches me, both chuckling in their demoniacal manner, but not attempting to molest me. Descending, I hasten to my waiting horse and drive home, well pleased with my afternoon's outing.



YOUNG COOPER'S HAWK.—Louis Agassiz Fuertes.—1897.

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Editorial Eyrrie.

How to become a truly great ornithological author is a question which seems to agitate the mind of many a person. We can answer that question and set that agitation at rest. The treatment we recommend to the patient is simple and natural; it is warranted to kill or cure the worst case. Here is our prescription:

1. Learn to spell correctly.
2. Learn to punctuate properly.
3. Learn to construct sentences grammatically.

When the patient has taken this medicine for a few years, he will either be dead or in a fair way to recovery. In the latter event, the rest is easy, as follows:

4. Find out something that nobody else knows about birds.
5. Write it legibly.
6. And send it to THE OSPREY.

Then we will issue a certificate of health, and suggest a post-graduate course of treatment by means of which truly great ornithological authorship may be embellished in the most charming manner. Candidates for this course are only required to sign their names so legibly that neither the editor nor the printer can mistake them; to give the date when and the place where their truly great ornithological authorship displays its perfections, and to put it all on one side of the paper. If the archangel Ga-

briel were to send us the glad tidings of salvation on both sides of the paper we should decline his article with thanks, and tell him that is no way to blow his horn.

There seems to be a difference between the shot-gun and the opera-glass wings of the ornithological army. If it does not adjust itself we will do all in our power to bring about a better understanding— even act as referee— and thus cause suspension of hostilities while the disputants forget their dispute long enough to unite in abusing us. One trouble with the Audubonians seems to be that there are too many inspired idiots among them, who fancy they have a God-given mission not to hide their light under a bushel. The shotgun people are mostly made of sterner stuff; they are realistic and can be cultivated, educated and really helped in various ways. But the opera glass fiends! They always live too near the great heart of nature to know anything of her head or hands, or do a stroke of sensible work, even to protect the birds. Out of the great heart of nature, where they live, they give all cry and no wool—something which, to change the metaphor, butters no parsnips. One woman wrote to say she was so unhappy because the cats in her neighborhood killed birds. We were going to write back and suggest that she collect the murderous felines and read the Audubon circular to them; but we restrained ourselves and advised her to feed the cats. This, we thought, would give the birds a little holiday in two ways, for if she kept a table d'hôte for the Tommies and Pussies she would have no time to spy out what was happening to the poor birds. If some of the Audubonians would keep cats in the house, and keep themselves out of print, they would be doing real work for a suffering world of feathered and featherless bipeds.

We regret to learn of the death, on January 27, 1899, near Benton Harbor, Mich., of Simon Pokagon, the venerable chief of the Pottawatomies, a contributor and subscriber to THE OSPREY. He died in poverty, after spending much of his life in trying to keep sober and prevent the U. S. Government from cheating his tribe. He was an Indian of superior intellectual equipment, who took an active interest in many other things besides ornithology. He first became prominent at the World's Fair of 1893, and his death has occasioned many favorable notices in the press of the country at large. His exact age we do not know, but it appears that his baptismal name dates from 1829.

Letter Box.

LOOKING DOWN CHIMNEY.

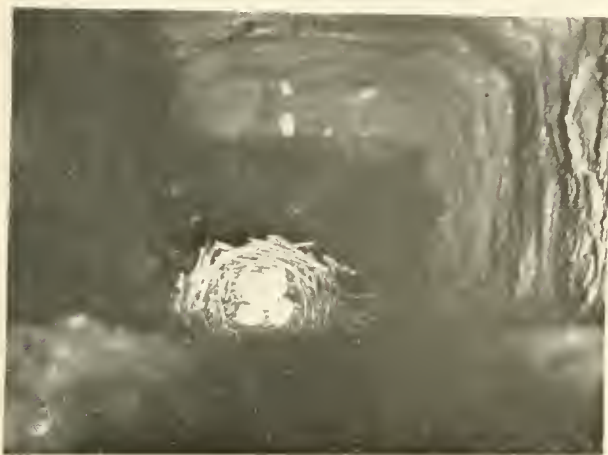
DECORAH, IOWA, SEPT. 12, 1898.

EDITOR OF THE OSPREY:

I send a photograph of a Chimney Swift's nest, with five eggs, which was taken June 23d of the present year. It is not often that good pictures of such a nest are taken, and you may like to use this one. Wishing all success to your great magazine, I remain,

Yours very truly,

R. W. HEGNER.



Looking Down Chimney.

ANOTHER SAMPLE.

NEW LONDON, OHIO, FEB. 20, 1899.

EDITOR OF THE OSPREY:

I received the December number of THE OSPREY, and was much surprised and chagrined, to see a letter to which my name was signed, printed as a sample. You will find it on page 59. I also notice an appended note by the "Eds."

As to "arraignment" people sometimes makes otherwise than in spelling. Some regardless of ones feelings. I know I am not learned nor brilliant, That is my misfortune.

I spend much time observing, studying and taking notes on nature in its naturalness, and have much material and many notes, which if "arraigned" by some competent person, would be of value. I had intended to have the notes written out, and a portion were to have been offered to THE OSPREY, for the editors to except or reject.

Under the present condition of my feelings the Editor of THE OSPREY need have no fear of any "arraignment" on my part of any thing I may have placed in good editorial english, from me.

If you have any objectional paper or papers written by me, let me know what the postage will be for their return and I will send the same.

Truly,

E. E. MASTERMAN.

["Nature in its naturalness is so good that we must give Mr. Masterman another chance. "Nature in its naturalness" is just what we want, and if Mr. Masterman will let us have some more of it we will promise not to flatter his innocence by comparing it to the purity of a Trilby altogether.—EDS.]

A LADY'S INDIGNATION.

WATERTOWN, N. Y., JAN. 31, 1899.

EDITOR OF THE OSPREY:

Not long since I read an article in a magazine which stated that the rapid decrease in the number of birds in the United States is a marked and deplorable fact. The writer attributed this decrease partly to the natural enemies of the birds, such as reptiles, mammals and birds of prey, and partly to the sinful fancy of women to decorate their bonnets with feathers, etc. But more—far more—to the irrepressible small boy and to the so-called scientist, whose insatiable passion for nest-robbing often defeats the repeated efforts of the songsters to raise a family.

An article in the November "OSPREY" speaks of the extreme rarity of the Ivory-billed Woodpecker. "During two months spent in search for this bird only four were heard." They will be still more rare since this search, for of the two pairs found the two males were shot! Who will be to blame if our rare birds totally disappear?

In the "Pigeon Hole" of the December "OSPREY," out of eleven letters, all but two (those concerning the Horned Lark and the Burrowing Owl) refer either to the shooting of birds or to robbing their nests. I use the word robbing advisedly, though, perhaps, the expression scientifically extracting might be more pleasing to the writers of these letters. In the letter about the nesting of the Anhinga, the writer speaks of taking seventeen sets of eggs from one swamp, all eggs of the Anhinga, as I understand it, and in some cases the same pair were twice robbed.

Poor birds! Why were you not completely discouraged? No wonder "the next spring the Anhinga colony was less productive," as the writer says, and "that the Anhingas are fast leaving." If the nests of the nine other kinds of birds found in this "collector's paradise" were treated in a similar manner we hope they too will leave. In your department "In the Osprey's Claws," December number, a reviewer speaks of "bird-murdering under the guise of science, that merits the severest condemnation," and he asks, "what possible advance can there be to science for a single private student to possess one hundred and fifty eggs of the Red-tailed Hawk, or forty sets of Humming Bird eggs?"

No wonder the Humming Bird has become so rare that we all rush to our window to see when one appears in our garden.

We say Amen most heartily to these senti-

ments, and commend them to the consideration of all so-called scientific collectors.

Yours respectfully,

AN INDIGNANT BIRD-LOVER.
(Mrs. W. H. Whitaker.)

A CONUNDRUM.

PROVIDENCE, R. I., FEB. 6, 1899.

EDITOR OF THE OSPREY:

We are rather queerly situated as regards collectors. There are, within a radius of ten miles of Providence but three active ornithologists, and what little new is found is by these three. The birds are, no doubt, thankful that there are no more. Three are enough, anyway. What we want is less collecting for greed and more observation and photography of our feathered friends in their haunts and homes. The Audubon Society is gaining ground and showing its influence. Why, the other night, they had Brother Chapman, from the American Museum, here to lecture, and it poured such buckets of water that I wore long-legged rubber boots. What was my surprise to see in the hall over a hundred people, three-quarters of them ladies. Five years ago we could not have got five people out to such a lecture on a fine night. People are waking up and commencing to see what is going on around them in the treetops. Let the good work go on!

A class of so-called "sportsmen" are doing more harm in Rhode Island (and I suppose in other States also) than all others put together. From the time the game law is off until it goes into effect again you find them afield with dog and gun. Well, the day passes and maybe they get a quail or two; then, becoming disgruntled because they have not killed forty or fifty birds, they commence to shoot everything with feathers on that is within range, and numbers of sparrows, robins, jays and small birds are blown to pieces. Then the shooter laughs and says to his companion: "Gosh! I just let daylight in all over him," as he throws the mangled remains away. I have witnessed such a scene, and the dogs even have looked up at the shooter, saying: "What a beast!" with their intelligent eyes. To kill off this class of "sports" is a conundrum. The only way that I can see is to breed the bad points out of ourselves, and show our progeny what is right. Until then the birds will have to suffer.

Yours truly,

II. S. HATHAWAY.

BUZZARDS AS SCAVENGERS.

FAYETTEVILLE, N. C., FEB. 13, 1899.

EDITOR OF THE OSPREY:

"Where the carcass is there the eagles are gathered together." This is the observation of an old Scripture writer. Buzzards more so! It is remarkable what a trifling incentive will draw a large congregation of buzzards. At a given moment, we will say, not one of these birds may be in sight, but let an animal drop dead, from any cause, or be even mortally wounded, and at once scores of the dismal scavengers will be discovered approaching from all directions. For example, here in Fay-

etteville we see only two or three gyrating in the upper air at any one time, aimlessly and idly, to all appearance; but the other day a neighbor's horse died and his carcass was hauled into a cane-brake near the edge of a cypress swamp. Before night all the adjacent trees were black with buzzards. They sat so close that the limbs broke with the weight. All day they feasted on the defunct animal, and at night they roosted. I counted the birds on one tree, and then multiplied the gang by the number of other trees near by, and figured out seven hundred. That was as many as the carcass would provide rations for at one pound of meat per diem for two days running, and a buzzard is good for five pounds. In two days there was not a vestige of meat left, and all the softer bones were consumed! Henceforth that locality is likely to be known as "Buzzard's Roost," but anyone passing thirty years hence will not be likely to discover any signs of it. By the way, we have the carrion crow here, as well as the buzzard, in large representation. He has white plume feathers on his wings and a black feathered neck. The buzzard (of the vulture group) has a neck which somewhat resembles a turkey's, hence the sobriquet of turkey-buzzard.

I might mention another instance of the voracity of these rapacious fowls, which sail so harmlessly and gracefully in the blue ether above our heads, while we doze in the sun. Does anyone imagine that if he were to drop suddenly of heart failure, for instance, in some untenanted locality, his body would long remain undisturbed? I will answer by an illustration: Your senior editor will recall that in the year 1874 I took the Irish Rifle Team, which shot the Creedmoor match, down into the Indian Territory, then colloquially known as "The Nation," for a deer hunt. There were thirteen of us in the party, headed by George Donnan, of Hannibal, Mo., and Captain Andrew Case and Bob Orme, of Oketopa, Kansas, a town just on the border, where we fitted out. A story full of ginger might have been written about that hunt at the time of it, but it is past date now. Suffice it to say, that, after a reconnaissance, we made for the Old Cabin Creek bottom and put up several deer there. We hunted both sides of the creek. All of us were mounted, and if a deer were wounded he invariably put off around through the adjacent hollows formed by the rolling pairie country, while we would ride in the other direction to head him off as he came around, which he was sure to do, for no animal of the chase, be it fox, wolf or rabbit, ever runs straight away, as experienced hunters all know, but they have their courses and run in circles. So, chancing to wound a big seven-time buck, which made off after the habit of his kind, around a high knoll, we spurred away to the left. We were not immediately sure of the effect of our shots, but when we saw the buzzards begin to gather we knew he was hard hit. When the deer started there was hardly a single buzzard in sight, but we had run hardly five minutes before the sky was clouded with their black forms, and when, finally, they all massed and settled down on one spot, we knew that our deer was down.

We knew where he lay by the mass of buzzards hovering. Every hunter put spurs to his horse and bore down upon the quarry at a wild pace, but before we could reach the deer the birds had his eyes out and a hole as big as a bucket picked in his side, and his liver and lights were gone before the breath was out of his body. We were not pleased to have our best trophy mutilated so, but we then and there divined the meaning of the colloquial word, "pluck," which is an equivalent for the liver and lights of an animal. The buzzards had plucked them out.

Buzzard's roosts are more conspicuous in story than in evidence. Like the crow's roosts, there are such, though they are not common. At evening, groups of a score or two will gather at regular roosting places on some old sycamore or Otaheite in suburban precincts, as at New Berne, in North Carolina. Ordinarily, the birds there are not plenty, but on slaughter days, when bullocks are to be killed, they gather at the shambles by hundreds, and on the adjacent roofs and fences, where they await with grim patience the throwing out of the offal when the dead meat is dressed. They are a loathsome and unneany bird, but useful.

CHARLES HALLOCK.

NESTING OF HERMIT WARBLER.

SANTA CLARA, CAL., FEB. 3, 1899.

EDITOR OF THE OSPREY:

A statement in the article by Milton S. Ray, "A Summer Trip to Yosemite," in the December number, is no doubt an error in identification. He mentions taking two eggs of the Hermit Warbler from a nest "placed in thick shrubbery along the river." He further describes the nest as similar to the Yellow Warbler's, etc. Doubtless what he did find is a nest of *Dendroeca nigrescens*, not *occidentalis*, for the latter nests entirely (so far as known) in coniferous trees at some height from the ground. Mr. Beck's set, taken in 1896, was forty feet from the ground on a pine limb, while my set, taken in June, 1898, in El Dorado county, was about forty feet up in a yellow pine. Both Mr. Beck's nest and mine are similar in construction, being considerably larger than any Yellow Warbler's nest recorded from these parts, and also distinctive in formation, being lined profusely with red cedar bark in both cases. In fact, this seems a peculiarity of the Hermit Warbler. The eggs also have a creamy color (not greenish-buff, as Mr. Ray states), and are appreciably larger than eggs of the Yellow Warbler, instead of smaller. Ridgway gives the average of the eggs of the Yellow Warbler as 0.66×0.48 . Mr. Beck's set of Hermit's eggs measured 0.71×0.51 , 0.71×0.52 , 0.72×0.51 and 0.70×0.50 . My set was slightly smaller, being 0.66×0.52 , 0.68×0.53 , 0.67×0.53 and 0.67×0.53 .

In further support of my idea that Mr. Ray has mistaken the Black-throated Gray Warbler for the Hermit, the nest of the former is quite similar in shape, size and composition to the Yellow Warbler's, except the lining which is fibers etc., as Mr. Ray states. Besides, the Hermit Warbler is never recorded as nesting in bushes.

The Hermit Warbler is a rare breeding resident, and but two authentic sets have been taken in California so far as recorded. My set of 1898 was the second, and will be recorded in either the April Auk or an early Cooper Club Bulletin.

Yours sincerely,

CHESTER BARLOW.

THE ART OF KICKING GENTLY.

ATCHISON, KANSAS, FEB. 15, 1899.

EDITOR OF THE OSPREY:

I have been reading THE OSPREY with a great deal of pleasure. Such a medium of communicating items of news in the bird world is needed, and THE OSPREY fulfills this purpose very well.

Having said this, I regret to feel called upon to pass any criticism on so excellent a journal. My experience has taught me to dread "kickers" above all people, but I hope you will not look upon me as one of the chronic recalcitrants. To come to the point, it is the record of bird-killing and nest-robbing in your magazine that pains me. Is it necessary to print articles that strike one as gory? Will not the influence on young persons be harmful, leading them to think that they can not study birds without using guns and collecting eggs? It seems to me that enough birds have been treated in this cruel way, even for scientific purposes, in cases where the species are very rare.

Take, for example, Mr. Philo W. Smith's interesting article in THE OSPREY for December, on the nesting of the Blue-winged Warbler. It grieved me to think that he felt it necessary to rob the three nests he found and even kill one of the poor little birds. What need had he of so many eggs, or of any? After making sure of the identity of the birds, was not that enough? If he had watched the birds building their nest, hatching their young, and rearing them, and then told us the story in his graphic way, he would have contributed something to our knowledge of bird life as well as to literature. Others have, doubtless, found the nest of the dainty Bluewing, and have robbed it and killed the birds, but who has ever patiently studied the nesting habits of this species? It seems to me that it would be more scientific to study birds in all the varied phases of their lives than to shoot them and despoil their nests as soon as found.

Other articles in your magazine evince the same disposition on the part of the writers to kill and rob. If we really wish to spare the birds, I feel that professional ornithologists must set the example of mercy. As long as many of them continue to destroy with so ruthless a hand, our arguments against pot-hunters and fashion-mongers are robbed of all their moral force. I think I know how you feel on this subject, for I have read with sincere pleasure your address before the World's Congress on Ornithology. If you can induce those who write for THE OSPREY to observe the birds instead of hunting them, and then describe the facts, you could make the magazine an ideal one.

I wish to thank you personally for my many obligations to you. I constantly use your "Key" in my study of my "bird neighbors," and find it invaluable.

Very sincerely yours,

LEANDER S. KEYSER.

[We do not share Mr. Keyser's dread of "kickers." They have no terrors for us. We regard them as generally useful and well-meaning persons, whom we encourage, as in the present instance. Yes, it is necessary to print articles which strike some "kickers" as "gory." Neither young nor old persons can study birds successfully without killing and robbing some of them. We do not know for

what purpose Mr. Philo W. Smith desired three sets of the eggs of the Blue-winged Warbler, but we presume he wished them either for his own cabinet or for sale or exchange with other collectors. We venture to remind Mr. Keyser that all the birds killed and nests robbed for ornithological purposes, since ornithology began, are utterly insignificant in number in comparison with those so treated annually by farmers' wives and other poulterers. Also, that God kills more birds continually by means of bad weather, snakes, hawks, skunks, monkeys and other destructive agencies than have been killed for ornithological purposes, since the world began, and we have no disposition to find fault with the Almighty.—Eps.]

Pigeon Holes.

DESTRUCTION OF BIRDS BY THE ACT OF GOD.—The cold snap of last week knocked the bottom out of the coldest weather "in the memory of the oldest inhabitant" of the Muskingum Valley, or Southern Ohio. The temperature ranged from 32 to 41 degrees below zero. Owing to the snow and severe cold, many winter resident birds, quail and rabbits were starved and frozen to death.—WILLARD H. DAVIS, Lowell, Washington County, Ohio, Feb. 18, 1899.

RED-HEADED WOODPECKER FAR NORTH IN WINTER.—While on a short hunting trip, the 11th of January, 1899, in Green Lake county, Wisconsin, I was greatly surprised by seeing a Red-headed Woodpecker (*Melanerpes erythrocephalus*) in a small strip of woods, sitting on a large elm tree, in a sleepy position. To make the identification sure, I shot him. On examining his stomach I found that he had sustained himself by eating leaf-buds and the seeds of various plants. As a general rule, these birds migrate by gathering into small flocks about the latter part of October, and arrive not before the middle of May, the following year. Have any of your readers in this latitude observed a similar case?—H. E. NEUMANN, Watertown, Wis., Feb. 13, 1899.

IMMACULATE EGG OF BARN SWALLOW.—In the October, 1898, *OSPREY*, I find that Mr. Tyler asks for records of pure white eggs of *Chelidon erythrogaster*, as it now is, in the A. O. U. list. In May, 1893, I secured a set of five eggs, one of which is devoid of markings, the other four being normal. Fully a dozen other sets were examined in the same barn, but no other pure white eggs were noticed. This was at Bedford, Lawrence county, Indiana.—C. PIPER SMITH, Anderson, Ind., Feb. 10, 1899.

A USEFUL EGG KNIFE. In *THE OSPREY* for December, 1898, in an article on "Some minor trials in preparing eggs," Eugene S. Rolfe says: "The inner film of membrane that the drill fails to cut away is one of the most annoying obstacles to satisfactory work, and the despair of every collector."

I overcome this difficulty by drilling clear in and then cutting the flap of film away with a slender, pointed knife, which I made by forcing a straightened piece of watch-spring into a soft wood handle far enough to make it solid,

then filing it to a point about half an inch long, and then sharpening it on a whetstone. With a little care and patience, the film in small eggs with fragile shells, as well as in the large, tough eggs, can be removed, leaving a clean-cut hole, allowing perfect drainage and free admission of air. If such a knife is once used for removing the flap of film covering the drill hole, one will have no occasion to use an embryo hook or a dentist's cone burr for that purpose. To make a clean cut it will be necessary to keep the knife very sharp—the thin, fine point is quickly dulled by the gritty shell.—WILLARD H. DAVIS, Lowell, Washington County, Ohio, Feb. 18, 1899.

RARE BIRDS IN RHODE ISLAND.—During the spring migration of 1898 an unusual number of rare Warblers passed through this State. On the morning of May 18, 1898, in Warwick, I met with a Tennessee Warbler, singing in the tall oaks. Of a sudden, he flew down into a clump of huckleberry bushes, and not knowing its song, I reluctantly shot it. There is one other record, a male, shot at Centerdale, R. I., Sept. 18, 1886.

One June 5, in Warwick, I found a male Mourning Warbler searching for breakfast in a moist swamp. Three others have been taken, one by myself, May 21, 1896, in Cranston, R. I. Their song so nearly resembles the Maryland Yellow Throat's that the two birds are difficult to tell apart. Besides these, I met with Wilson's, Black-throated Blue, Magnolia, and Canadian Warblers.

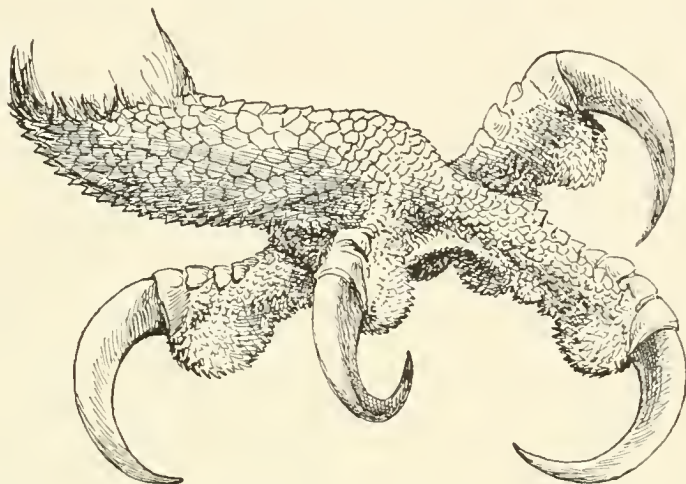
Amongst a number of White-throated and Swamp Sparrows, on the morning of Sept. 28, 1898, I espied a Lincoln's Sparrow, of which there have been but two others taken in the State. This bird is very shy and retiring, and easily overlooked amongst numbers of other species.

While out with my dog after quail, on Oct. 9, 1898, in Warwick, I flushed a Bicknell's Thrush from among the leaves in a small grove of oaks and chestnuts. He flew about fifty feet onto the side of a large oak, clinging with his claws, like a Nuthatch, to the coarse bark. It was a young male, and is the only specimen that I know of having been taken in Rhode Island.—H. S. HATHAWAY, Cranston, R. I., Feb. 6, 1899.

BIRDS WINTERING IN RHODE ISLAND.—Mr. Howard Mason shot a Hermit Thrush at Escoheag, Dec. 31, 1897, in some dense pine woods. On Jan. 31, 1899, and again on Feb. 2, I saw a Fox Sparrow in company with some English Sparrows, amongst the bushes on a

small pond about 200 feet from my house. In this same locality two Song Sparrows and a Winter Wren are keeping each other company through the dreary winter months.—H. S. HATHAWAY, Cranston, R. I., Feb. 6, 1899.

In the Osprey's Claws.



BULLETINS 54 AND 55, of the New Hampshire Agricultural Experiment Station, have reached us. In these papers Mr. Clarence M. Weed shows how useful the Chickadee and Chipping Sparrow are in destroying noxious insects. His work deserves commendation.—E. C.

THE JOURNAL OF THE MAINE ORNITHOLOGICAL SOCIETY, Vol. I, No. 1, for January, 1899, reaches us somewhat delayed. It is a quarterly, 8vo., this number of 12 pages, the official organ of the Society, devoted to Maine ornithology, with the motto, "Bird protection, bird study, the spread of knowledge thus gained, these are our objects." These are certainly worthy objects, and we are always glad to welcome meritorious publications relating to birds.—E. C.

BIRDS OF NEW HAMPSHIRE.—A preliminary list of the birds of Belknap and Merrimack counties, with notes by Ned (Sic!) Dearborn, was presented to the faculty of the New Hampshire College of Agriculture and the Mechanic Arts, as a thesis for the degree of Master of Science, January, 1898, and printed as an 8vo. pamphlet of pp. 34. It is based upon the author's observations for ten years, 1888-98, supplemented by what information was available from other sources. The list is certainly incomplete, but authentic as far as it goes, and the notes are fair. The worst feature is the bad spelling of many of the scientific names, due to persistence in the sins of the A. O. U. Check List. Any college boy should be ashamed of this, and the college authorities, if they examined his thesis, ought not to have permitted it.—E. C.

BULLETIN OF THE MICHIGAN ORNITHOLOGICAL CLUB, Vol. II, No. 3-4, JULY-DEC., 1898.—This excellent periodical reaches us not much delayed, and the editors promise that this shall be the last double number, from which we infer the renewed and increasing activity of the Club. Next to Mr. Chapman's Bird Lore, the Bulletin makes the best appearance of all the ornithological periodicals which now reach us.

It is as well printed as THE OSPREY used to be when Mr. Johnson was in charge. The articles are well up to the mark, and the editorial matter remarkably good. The Cooper Club now has on its hands a very pretty quarrel, to see whether California or Michigan shall do most to promote ornithology, and we hope they will both win in their generous interstate emulation. As between Mr. Leon J. Cole and Mr. Chester Barlow, each shows himself to be a good editor, well deserving the support of his club and of all who are interested in that most delightful branch of natural history which relates to birds.—E. C.

BRUSH, SEDGE AND STURBLE. By Dwight W. Huntington. Part V, pp. 65-80, plates: folio. The Sportsman's Society, Cincinnati, 1898.

This magnificent and luxurious work continues to appear with regularity, and the author is to be congratulated upon the success of his artistic efforts. Everything is good—the plates are brilliant impressions, the typography is beautiful, the text is attractive to every lover of sport who has any aesthetic sense. The present number has a fine colored plate of duck shooting, and many other illustrations, chiefly devoted to the Turkey in its several subspecies, and to certain introduced

Pheasants now naturalized in the United States. Our single criticism is, that Mr. Huntington continues to use for the Turkeys the wrong nomenclature, which has stood so long in the A. O. U. Check List, thus perpetuating errors which we lately exposed and caused to be abolished. We trust that this elegant publication is receiving the full support it deserves, and shall watch its progress to completion with special interest. Too many good ornithological works are printed badly, like *THE OSPREY*. We should all strive to attain the standard of excellence in this respect now set up by Mr. Huntington in the present case and by Mr. Chapman in *Bird Lore*.—E. C.

FOREST AND STREAM reaches us with unfailing punctuality, as it has done for lo! these many years. Nothing succeeds like success, and good wine needs no bush. The paper is a clean, strong, sound one, taking rank in the United States with the celebrated "Field" in England. No editor understands his own public better than Dr. George Bird Grinnell; no one is better able to give the world of legitimate sport just what it wants and ought to have. Every number of *Forest and Stream* is replete with interest and variety; ornithology comes in for its full share of attention, amidst a multiplicity of other things for which the paper stands. It is a foremost recommendation of *Forest and Stream* that it is always found on the right side of every question affecting the preservation of birds and other game from wanton destruction, the enforcement of game laws, and other important matters in which every true sportsman has a vital interest. On the other hand, it is free from the mawkish sentimentality which some journals affect as a fad in the matter of killing birds, mammals and fish. We believe in the ideas of *Forest and Stream* on such subjects, and we know there is no paper which more nearly realizes its ideals in all matters which come within its scope. Within our generation *Forest and Stream* has become a household word, and it seems likely to continue as a heritage of

honor, profit, pleasure and usefulness in the years to come.—E. C.

SHARPE'S HAND LIST OF BIRDS. Not all of *THE OSPREY*'s readers know already that a new Hand List of the birds of the world is now rapidly passing the press. The work is prepared upon a plan similar to that of the hitherto indispensable Hand List by G. R. Gray, but with omission of synonymy, except in special cases, references being made to the pages of the great British Museum Catalogue of Birds, the completion of which we noticed in a recent number of *THE OSPREY*. The Hand List is based upon this catalogue, following it closely in classification and nomenclature, and also in sequence of genera and species of the major groups, though the arrangement of the groups themselves is entirely different. The work opens with the famous *Archaeopteryx* of the Jurassic period, passes to the Ratitae, and so on upward through the ornithological system, the highest Oscine birds to come last. The opportunity is, of course, taken to include in the new work all the species and genera named since the successive volumes of the Catalogue appeared, and the additions bid fair to be numerous, especially in those groups of birds which were treated in the earlier volumes of series. This implies a critical review of the whole of ornithology since 1874, and for this task there is no other man living so well fitted as Dr. R. Bowdler Sharpe, the eminent authority of the British Museum. Dr. Sharpe is sending us proof sheets of the Hand List, with request for cooperation to the extent of any criticisms or suggestions we may have to offer. We had read the proofs as far as page 176 by the latter part of February last. The composition of the work seems to be going on rapidly and steadily. We shall not fail to inform our readers of its progress from time to time, and may have something more to say on its completion. Our heartiest good wishes go out to our distinguished friend for the success of his great undertaking.—E. C.



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APTOSOCHROMATISM IN *CHRYSOTIS LEVAILLANTI*.*

By FRANCIS JOSEPH BIRTWELL, Dorchester, Mass.

Aptosochromatism is defined by the Century Dictionary as "change of color of the plumage without loss or gain of any feathers. Cones." Such color change is a subject which appears to be not only of considerable importance in the study of feathers, but also of peculiar

most recognized branches of ornithological science.

Comparatively little has been learned in this regard of the Psittaci, though few groups of birds are so well known as the Parrots in captivity or semi-domestication. The peculiar colors, and their changes and combinations without moult, found among various members of this order of birds, offer some features of marked interest in their bearing upon the study of aptosochromatism. The Mexican Double Yellow-head, or Yellow-headed Amazon, *Chrysotis Levillanti*, for example, affords an inviting case of change in the coloration of individual feathers, independently of moult.

My attention was first directed to this phenomenon by continued observation of a young Yellow-head in the possession of Mrs. William P. Bolles, of Boston. The bird being friendly, it was often caressed, and I soon noticed traces of a process of color change going on in the feathers of the crown. Realizing the importance of the matter, I made frequent examinations of the plumage, and specimen feathers were collected. On July 13th I was obliged to absent myself on business matters for two months. Upon my return I found the bird to be completing the regular fall moult, and was pleased to observe that the yellow of the crown had advanced quite half an inch beyond its July limit. After that, cast-off feathers were carefully preserved, and the whole number of contour feathers of the head which were dropped did not exceed twenty. To appreciate the fewness of this number, in proportion of the whole plumage of the head, one has but to count those feathers upon a skin. Also, the feathers lost were chiefly old ones from the forehead, and of a yellow color.

Thus the possibility of extensive feather loss is put quite out of the question in the remarks which will follow. In addition to saving the cast feathers, the bird was frequently inspected; and through the courtesy of Boston dealers seven other individuals were examined.† These birds, with one exception, were



FRANCIS JOSEPH BIRTWELL.

interest. Although as yet this topic has been only inadequately treated, the abundance of available material for this attractive field of investigation will doubtless soon stimulate such an active movement among ornithologists as will place the subject among the fore-

*Read before the Nuttall Ornithological Club, of Cambridge, Jan. 2, 1899, with exhibition of microscopical preparations.

†Thus the whole of the material examined was eight birds, from the following sources: 1 bird from Mrs. Bolles; 1 from G. S. Greenleaf & Co.; 2 from G. H. Holden; 2 from Chas. Ludlam; and 2 from Ludlam Bros.

quite similar as regards the head plumage, and evidences of active aptosochromatism were exhibited in all these cases. One fine old bird from Mr. Hoiden's store deserves individual mention. In this particular case, not only were the whole head, throat and neck bright buttercup yellow, but patches of the same color were present upon the breast, back, and rump; even the wings were changing, and yellow was diffusing itself over the secondaries and coverts. As it is stated in Mr. Hoiden's book (*Canaries and Cage Birds*) that the yellow extends with age, it is probable that this specimen is an old bird.

The slight difference, if any, in the coloration of the two sexes is immaterial to the present inquiry. Salvadori states in his volume of the *British Museum Catalogue*, page 293, that the female is "like the male." The Bolles Parrot was selected as the best case to work upon, chiefly because of its readiest accessibility, which facilitated examination. This bird appears perfectly healthy, and is fed for the most part upon hemp and sunflower seeds. It represents an average case among those observed at the various stores.

Before going further into the matter of color change in feathers, it will be well to define a few terms for the purpose of arriving at a more complete understanding. I have used the term "aptosochromatism" in the sense given to it by its coinor, and because of its precise definition and ready comprehension. Just as the simple term "moult" has often been misused or abused, in its meaning or application to a class of cases in which it is not concerned and to which it, therefore, does not apply, so has "dichromatism" sometimes been misunderstood or misapplied. Properly speaking, dichromatism means double coloration, or any two different colorations which a bird may exhibit under different conditions of age, sex, season, etc. Albinism, melanism, erythrism, and the like, are examples of more or less abnormal dichromatism which may permanently affect certain individuals of a species; a Heron, which is white when young and colored when adult, is an example of normal dichromatism dependent upon age of the individual. Again, the term dichromatism may be and has been used in connection with total or very extensive color changes, which regularly result from moult, and also in connection with similar changes which occur independently of moult; in the latter case, the term is synonymous with aptosochromatism. The Bobolink, as demonstrated by Dr. A. P. Chadbourne (*Auk*, xiv, Apr., 1897, pp. 137-149, plate), may have a spring moult, and also a further color change, resulting from loss of the barbs of feathers without any further loss of feathers. Thus dichromatism may be used in a broad generic sense, to be specified or qualified by modifying terms; as, for example, dichromatism or change of color due to moult, consequent upon loss of old feathers of one color and gain of new feathers of some other color. This may be called ptosochromatism, in distinction from that color change which occurs in feathers themselves, without moult, and which constitutes aptosochromatism. The latter term may be briefly defined as

color change of the individual without loss or gain of plumage. When change from one particular color to another without moult is to be specified, it may be easily indicated. Thus, chlorochrys-aptosochromatism means change of color from green to yellow without loss of plumage; that is, without loss of feathers enough to constitute a moult. The application of this last term, "moult," is usefully restricted by Dr. Chadbourne, on page 146 of his article on the "Spring Plumage of the Bobolink," and it will be used with such restriction in this article. The xanthochroism of Gadow (*Newton's Dict.*, Article Color, p. 99), is inapplicable to the present case, in view of his suggestion that the process may be one of "arrested development;" for, as I shall show, the color change occurs in *Chrysotis leucilanti* after the feather which turns from green to yellow is perfected.

The general external appearance of the chlorochrysotic change will be first considered. Macroscopically, the contour feathers of the crown consist of main shaft and after-shaft, both with the lateral appendages or barbs constituting the vanes, which are downy in the after-shaft, and need not be further noticed in the present connection. The normal green feather is represented in Fig. 1 of the plate. Gradually, as activity increases in the individual feather, a faint trace of color change from green to yellow becomes apparent, as represented in Fig. 2. This stage varies much, the yellow extending well down one side of the vane in some cases, while in others it only margins one edge of one vane at the end, and in others again it tips the ends of both vanes. The change thus begun progresses, and continues till an intermediate stage is reached, as shown in Fig. 3, where the feather is green-centered, but widely margined on both sides with yellow. Feathers in this stage are conspicuous in the plumage, and offer obvious proof of aptosochromatism. The yellow increases in extent till the green is almost gone, as represented in Fig. 4. The change of color goes on till the metachrosis is completed, as shown in Fig. 5, in which the last traces of green have disappeared, and the individual feather that was once green in all its colored portions has become entirely yellow in those same portions. During this total change the irregularity of the substitution of yellow for green on particular barbs is not a little curious and interesting. It should be borne in mind that each barb is itself like a tiny feather, of which the barbules, with their barbiels and hooklets, represent vanes; and any barb may become the seat of a color change independently of other barbs, just as a whole feather may change color independently of other feathers. The five stages selected for illustration could readily be taken from various parts of the plumage of the head; and in view of this fact it seems surprising that the matter should not have hitherto attracted much attention. Even the dealers appeared to be ignorant of the true state of the case. The change, however, is very slow and gradual. In an interval of ten days I could detect but slight increase of yellow in certain feathers, and, as already remarked, two months were required to advance

the yellow area half an inch. More material will be required to ascertain whether or not the chlorochrysotic change observed in this individual went on at the rate normal to the species.

When in the beginning the change was noticed, a careful search for pin-feathers was made, without finding a single one. There were many of the intermediate feathers, partly green and partly yellow, on the head at that time. In the middle of September, when I resumed my observations, the moult was just being completed; but where yellow feathers formerly grew, yellow feathers were being developed and where green feathers had been shed, green feathers were being renewed. The importance of this point can not be overrated: for it thus appears that moulting, though it may be concurrent with color change of individual feathers, is not in any way concerned in the latter process, except, of course, in so far as it may substitute for an old, worn-out and inactive feather a new one in which color change may subsequently occur. In one instance I observed the change from green to yellow before the feather was fully developed, but no similar cases were subsequently noticed.

This whole matter is one of great intrinsic interest, and probably only one of many very instructive phenomena to be discovered in connection with the sadly neglected study of feathers.

The above described facts were confirmed by later tests of their verity, whenever specimen feathers were pulled from various parts of the head, after the moult had been entirely accomplished. The density of the acquired yellow varies, but according to my observation it is brightest when assumed aptosochromatically—if I may coin the adverb. The golden yellow appears to grow pale as the yellow parts of the bird extend and are renewed by seasonal moult.

It is highly probable that aptosochromatism is not confined to *C. levaillanti*, but that other members of the genus or family may exhibit the same process of color change independent of moult, to a more or less marked degree. The "Single Yellow-head" of the faneiers shows traces of it, and no doubt the peculiar variations in plumage of many Parrots will afford much curious and valuable information when fully worked out. A singular fact is cited by Gadow (l. c.), who states: "In Brazil 'contrafeitos' of the various species of *Chrysotis* are fashionable. These are produced by the rubbing in of the cutaneous secretions of a Toad, *Bufo tinctorius*, into the budding feathers of the head, which then turn out yellow instead of green."

The principal macroscopic points thus far made may be summed as follows: (1) Change from green to yellow without loss of plumage, or chlorochrys-aptosochromatism, in *Chrysotis levaillanti*, is a fact, and a plain one. (2) Though coincident at times with a moulting process, this color change is entirely independent of moult, as shown by the presence of changing feathers at all seasons of the year. (3) Eight cases investigated probably show the process to be normal to the species, at least in captivity. (4) In one instance, at

any rate, the fall moult in no apparent way affected the progress of the color change. (5) As shown on the plate, the process is of slow and gradual progress through the individual feather. (6) As far as known, it is independent of age, sex, and season.

The statements of numberless writers admit dichromatism without hesitation, but they generally fail to say whether or not it is independent of feather loss—that is, aptosochromatic.

It is plainly to be seen, and is well known, that the yellow parts of *C. levaillanti* increase in area with age, after successive moults, but the chlorochrysotic change of individual feathers, of which I treat, goes on at any age.

Coloration of feathers is produced in three ways: (a) By chemical pigments which absorb certain light-rays. (b) By objective superstructures which modify the pigmentary effects. (c) By subjective structural effects upon the eye, resulting in varying prismatic or metallic iridescences, according to the position in which a feather is viewed.

The Parrot's color is evidently due to a combination of pigments and superstructure, which last is arranged in certain portions of the feather in apparently cellular form. Following the simple qualitative tests formulated by Gadow, the pigments known as zoomelanin and zoonerythrin were readily determined, but the results for zooxanthin were not so successful, though this latter pigment probably constitutes a large portion of the coloring matter of the feather. In a green feather of the head the red and black combined formed a dense mass at the tips of the barbules, extending downward for about two-thirds of the length of these parts: there was a central column of the same down the barbs, appearing brownish under the microscope when unsectionized (an effect due to the surrounding yellow parts); and a heavy mass of dark matter was present at the base of the rhachis near the junction of the calamus, in the form of a long cone with a bifurcated base; the body of this dark cone gradually tapering up the rhachis till it ended in a fine point about half way up the length of the feather. The space intervening between this cone and the walls of the rhachis, together with the rest of the shaft, was filled with fine granules of apparently the same varieties of pigments, sometimes in rod-shaped masses, giving a very curious appearance. This effect is also produced at the junction of the barbs with the rhachis. The yellow pigment is found as a diffuse non-granular stain in the lower portions of the barbules, and surrounding the well-defined central portions of the barbs. By transmitted light such a feather appears of the combination coloring of the underlying pigments, and a dull yellowish gray results. When crushed, a similar effect is obtained. This is in itself suggestive of a structural element in the coloring properties, which, as will be presently shown, is involved in the centrally-situated cellular pigment masses. This agrees with Gadow's statement that in the genus *Chrysotis*, "the surface of the radii and rami (barbules and barbs) is smooth and quite transparent, while between it and the pigment is a layer of small polygonal bodies."

Without doubt we have here a blue-producing structure which combined with the yellow stain results in green. This point was admirably shown on section through a green feather at an angle of 45 degrees with the barbs, so that a thin layer of the yellow covered the inner structure at one point and a thicker layer at another point. Under the microscope different shades of green, from very pale to the normal tone, were to be seen, according to the thickness of the yellow stain; and in places where the underlying colors were exposed a deep, almost indigo, color was seen.

When color change begins to be manifested in a green feather, the only perceptible activity is in the small part of the feather undergoing the alteration, and it is not till an intermediate stage is reached, as in Fig. 3, that the whole of the feather becomes disturbed. Gradually, as if by a slow dissolving process, the dark coloring leaves the barbules; next, the central cellular structures of the barbs are disarranged; and finally, the flocculated masses of the rachis disappear. Thus from a green feather a yellow one results, microscopically free from every other color than yellow, excepting for the now pale columns of the barbs and heavy mass of the rachis. Strong evidence that the superstructure of the feather is thus broken up is afforded by the single test of transmitted light. A feather changed from green to yellow shows true in such light. The crushing of such a feather gives the same result, excepting, of course, for a slight deepening of the hues of the yellow feather where the underlying pigment, chemically proved to be red, is brought into prominence. This red gives a density to the yellow, as is evident when the zoonerythrin (red) is dissolved out; for the yellow then appears paler. A feather which has turned yellow, when treated with $\frac{1}{2}$ per cent solution of KOH gave little or no result; but upon submitting a green feather to such a test, complete decoloration resulted. Apparently this indicates that, as caustic potash affects melanin (black), and a green feather treated with this reagent is discolored, while a yellow feather so treated is not changed, the blue-producing structure depends largely on this black pigment; and also that, in the process of color change of the feather, there is a complete alteration in the relative proportions of the pigments concerned. This last conclusion is confirmed by treating a yellow-changed feather with ether, when the central red is almost completely removed, only a few undetermined granules remaining. Thus the main point to be considered is, that red and black, together with a superstructure capable of producing green in connection with the yellow stain, are present in the green feathers; that under vital conditions this black pigment, together with the particular superstructure, is broken down from its former condition and destroyed. To produce such results as these there must have been very decided changes, both in the surface structure and in the pigmentation of the individual feather which has turned from green to yellow. The whole matter looks much like a ripening process in certain feathers, which

thus change color; and it is curious that only some feathers, as of the head, and not those of other green parts of the plumage, should suffer such profound metachrosis. That the color change from green to yellow is an actual physical modification of the substance of the feather, is shown by the fact that such a yellow-turned feather is identical under the microscope with any yellow feather which is of this color from the start; that is, an aptosochromatically yellowed feather is indistinguishable from an originally yellow one which sprouts during the moult.

In aptosochromatic feathers an active movement was evident, for the tips of the barbules, formerly occupied by the dark masses, in the green stage of the feathers, became filled with the yellow in the changed feathers. In view of this fact, it does not seem unreasonable to suppose that an additional amount of pigment may have been supplied, either indirectly from the body of the bird or directly as a result of chemical activity in the feather itself; but this is a matter into which I can not at present enter, and just how the change takes place is left for wiser heads than mine to discover. The phenomenon may possibly be dependent upon a process of retrograde metamorphosis or catabolism, in connection with some solvent action of certain fluids supplied to the feather from the bird's body in varying quantity and quality. Some hint of the mode of supplying pigment to a growing feather was afforded under the microscope. In an immature feather, yellow from the start, no coloring was to be seen till the rachis was reached, at the point where a mass of coloring was being deposited, and granular matter could be seen flocculating in all directions. This feather when plucked emitted a drop of colorless fluid from the umbilicus inferior, and that this fluid should contain the pigments in solution, to be precipitated in the rachis and vanes, is not impossible. The accurate determination of this point would greatly assist in the comprehension of aptosochromatism.

Cross section of a green feather displayed under the microscope the arrangement of the structure and coloration. Starting from the exterior of the section, first a layer of yellow was seen, and then in the center was a collection of cellular bodies thickly massed with color granules. It appeared in many cases that these granules were external to the cell-like bodies, and again, that they formed a part of the internal composition of the latter. The whole subject offers a most attractive field for observation and speculation, as the subject has been fully treated by no one, so far as I know.

In brief, the main points now made are these: (1) That color change of plumage without feather loss enough to constitute a moult is a fact; aptosochromatism is demonstrated to be true. (2) That color change in the individual feather is an indisputable fact. (3) That this change in the present instance depends upon vital conditions within the organism, inasmuch as it is known to cease after death. (4) That aptosochromatism and moult are two distinct and independent processes, though they may be concurrent, or

coincident in time. (5) That in the case of the Parrot, there was a very appreciable microscopical and chemical difference in the relative amounts of pigments present in the two extreme stages, green and yellow, of the same feather, as well as a structural difference. (6) The probability of modification in the feather indirectly by gain of some constituents from the fluids of the body, or directly from chemical change in the substance of the living feather, is strongly suggested.

In conclusion, it may be well to state that all my microscopical work was done with Boush and Lamb instruments, 1-2, 1-6, and 1-8 inch objectives, 2 and 1 inch oculars; and with slides mounted in Canada balsam, under fairly strong, clear light. The instruments were ob-

tained through the kindness of Prof. E. W. Morse, of the Bussy Institute, and Chas. E. Clay, Esq., of the Roxbury High School. I am also indebted to Mrs. W. P. Bolles, of Boston, for the use of her Parrot; to Mr. Nathaniel French, of the High School, for use of the laboratory there; and wish especially to express my obligations to Miss Edith F. Brainerd, of Dorchester, for her excellent work upon the plate, which was prepared by her from fresh specimens under my directions. It represents, as already said, five stages of the aptosochromatism of an individual feather of *Chrysotis levaillanti*, each about twice natural size.

80 Glendale street, Dorchester, Mass.,
January, 1899.

CHARLES HALLOCK.

By ELLIOTT COUES.

Charles Hallock, A. M., the subject of this sketch, while not strictly a scientist, has been a member of one or more of the scientific societies of Washington since their organization, and has filled a unique and useful position for fifty years as a close observer and



CHARLES HALLOCK.

discriminating collector in the field of natural history. Prof. G. Brown Goode, of the National Museum, once wrote: "No man can help us like Chas. Hallock." No geographical division of North America, marginal or intermediate, from the subarctic regions of Alaska

and Labrador to the Caribbean Seas, has escaped his attention; while his sketches of travel which have appeared in the magazines and leading journals of the United States and Canada, together with the "Forest and Stream," which he established in 1873, and his numerous books, have given him an enviable prominence among tourists, sportsmen, and savans, not often acquired by specialists of his ilk. His "Fishing Tourist," published by the Harpers in 1873, was the record of twenty-five years of wandering through the wilderness areas of the United States and British provinces, and as long ago as 1878, George Dawson, the eminent editor of the *Albany Journal*, and himself an angler of renown, wrote: "Charles Hallock has written more and more wisely than any of his contemporaries." That was twenty-one years ago; and to-day we do not detect any lack of vitality or vivacity in his lucubrations.

As an ichthyologist, Mr. Hallock led the van up to the date of publication of his "Sportsman's Gazetteer," a 900-page volume, which appeared in 1877; that portion of it which treated of the edible game fishes of America, their synonyms, and classification, being in advance of all other works, and was so quoted by Prof. Theo. Gill, who assisted the author very materially in his description of the Pacific coast fishes therein enumerated.

The Florida peninsula had early engaged Mr. Hallock's attention, and in 1874-5 he fitted out the Ober and Al Fresco (Dr. C. J. Kenworthy) expeditions to the Seminole country and the west coast, and when his "Camp Life in Florida" appeared in 1876, the citizens of

Florida privately, and through the press and public meetings, acknowledged to the author his substantial services rendered to the State, so little had been previously written of its geography and resources. In the same way Mr. Hallock received the thanks of Minnesota

in 1858 for his services to that State. And in 1859 he opened up the Aroostook forest region of Maine to agriculture, through a summer of investigation, and a series of letters to the New York Journal of Commerce, of which he was then junior editor. The summer of 1860 was devoted to an exploration of Labrador, in company with myself, and from 1863 to 1866 to the Maritime provinces, including Sable Island, the Magdicens, and Anticosti. Mr. Hallock was one of the pioneer prospectors among the Ontario gold fields, which are now attracting so much attention, dating back to 1872, and in 1880 he and Edward Faye, of the Canadian Pacific Railway Survey, brought down to the St. Paul Chamber of Commerce the first ore specimens from the Lake of the Woods. The net objective results of these and many other similar adventures appear in the Hallock collection, aggregating a value of several thousand dollars, which he donated to the Long Island Historical Society, of Brooklyn, in 1883. In 1885 Hallock went out to Alaska and wrote up its resources and commercial possibilities in a work entitled, "Our New Alaska," with the subtitle of "The Seward Purchase Vindicated," every word of which has proved intelligently prophetic and true.

Not to be prolix in review of a most interesting life history, it may be said that four signal achievements of note accentuate Mr. Hallock's record. First, the Forest and Stream, which has had the effect to elevate the tone and status of sport, to disparage whatever was evil in popular pastimes, and to make the new woman possible. Second, his scheme to secure cooperative legislation for the protection of game, and to formulate a code of laws based upon the distribution of species, and uniform as far as practicable in their application to areas having the same climate and fauna; success to be accomplished through the agency of an international association for the protection of game, which he organized in 1874. Third, the incorporation of

the Blooming Grove Park Association, in 1871, Mr. Hallock being its first secretary, and a most active promoter of the finest existing game preserve on the continent. Fourth, the publication of the Sportsman's Gazetteer, which gave to the pupils he had trained a handbook by which they might stalk the continent of North America, and of which the London Field asserted that "a more complete and comprehensive work had probably never been published by any sportsman;" a gracious tribute bestowed in face of the fact that its own chief editor, Mr. Walsh ("Stonehenge") had already published in England an "Encyclopedia of Rural Sports," and other standard sporting books.

Briefly, if Mr. Hallock's claim to the gratitude and good will of American sportsmen rested solely upon his labors in behalf of the preservation and propagation of game and fish, he would stand deservedly high in the estimation of those members of the guild who appreciate true sportsmanship, and believe in giving honor to whom honor is due. In line with this thought, it should be mentioned that away up in the northwest corner of Minnesota, on the edge of what was once the great Roseau game region, there is a town of 1,200 people bearing his name (Hallock), which is the county seat of Kittson county, the most progressive municipality in the whole Red River Valley. He is the father of this town.

Mr. Hallock received his degree of Master of Arts from Amherst College, and was of the class of 1854. His father was Gerard Hallock, of the New York Journal of Commerce. His great-grandfather, William Hallock, with his two sons, Moses and Jeremiah, were Revolutionary soldiers, and others of his kinsfolk served in the struggle for independence. One commanded a privateer, and another the picket boats on Long Island Sound. In our Civil War, Gen. H. W. Halleck, a relative, was conspicuous on the Union side. The progenitor of the Hallock family settled on Long Island, near Southold, in 1640.

THE PRAIRIE HORNED LARK.

By REV. P. B. PEABODY, St. Vincent, Minn.

Dearest of birds is this hardy, restless, blithe-hearted singer, who may be classed as resident in Minnesota, since in winters of scanty snow he does not altogether leave the State, even in fiercest January. Probably, like Junco, he lingers near the snow line. With the first indications of spring he pushes north, and rapidly celebrates his nuptials. The arrowy chase, sportively indulged at all seasons, now takes on a new ardor, and nesting soon begins.

My prettiest set was taken with its very thick nest of grass at Macon, Mich., on March 9, out of a bed of snow; incubation advanced. For latitude of South Minnesota the earliest date I have is April 9, an incomplete set in a thick nest of grass placed flush with the ground in a stubble field. An incomplete set taken from a nest on the prairie, at Lacon, Ill., was probably a second laying, while corn field sets, with scant nests of rootlets, found

at Lake Crystal, Minn., on July 9 and 12, were very likely third sets. One of these nests contained two Cowbird eggs. Another, probably a second set, was taken in Stark County, N. D., from a prairie nest on June 3, the parents not being subspecifically identified. The eggs of this set are heavily ringed, and closely resemble those of the English Skylark.

At Wilder, Minn., I once enjoyed a whole winter's observation of this bird. A bleak, blown field on the road to my school was their constant feeding ground and playing haunt. In this environment were three pairs when late March arrived. In early April, noting domestic signs, I watched a father bird one morning. Daintily tripping and constantly pecking, he suddenly flew with the gathered mouthful, and lightly dropped among scant weeds, at the margin of a fallow garden. The four callow things that nearly filled the nest were marvelously hard to find, so complete

was their simulation. If I turned my sight for an instant from the scantily protected nest it was hard to find again. I watched those birds grow, but a sad day came, just before they should have flown. One morning a little heap of earth, where the nest had been, showed how carnivorous a mole may be. A week or so later, on my open field, a male bird went down, with his beak full and manner paternal, disappearing on a bare spot, whence his mate emerged and rapidly flew away. There were young in a hole in the ground, with no shelter but a clod, and no nest but a half-dozen blades of grass. The following June, as I rode homeward one day, I saw a male lark gathering food beside the road near my barn. When loaded, he flew over my head, and alighted close to the road. The nest, which I found at the spot, contained three young. It was located only fourteen inches from the well-beaten highway, among shoots of rag-weed about three inches high, and was very scanty and poorly concealed. My experiences with the nesting of the Horned Lark in this semi-boreal region, where North Dakota, Minnesota and Manitoba meet, have been few, but very instructive. On the 20th of last May, while waiting for a train at Morris, Man., I looked about me, as an ornithologist will, and soon saw opposite the section house, on the main track of the N. P. Ry., a Lark gathering grasses between the rails and whilom seizing a bit of cotton waste. It soon became evident that my close presence was unwelcome, for the little worker lost no time in trying to show her wishes. The hint was enough, and I was soon viewing the nest-building from a discreet distance. Hardly had I backed away when the bird vanished between the rails. I ran to the spot, the mother flew, and there were the beginnings of the nest in a hole dug at the end of one of the ties. Two weeks later, glad that business should again call me that way, I hurried from the train to the spot, with my camera set, hoping to record a novel nesting site; but, as might have been foreseen,

I found the two eggs that the nest contained broken by a pebble, tossed by the train, or by the section boss' shovel. So all that I have by way of proof is the crushed nest, showing on one corner the imprint of the tie.

On the 5th of last July, while crossing a field at Hallock, making a short cut to a parishoner's house, a fresh Lark's nest caught my sight. And no wonder, for among the short fresh barley blades a three-inch deep hole, slanting to the north, had been dug beside a drill-row, and scantily lined with last year's wheat leaves. The hole contained three fresh eggs.

It would seem that early nests of the Lark are likely to be well lined with grasses, and to be comparatively well sheltered from observation and from winds, while later ones are scant of material and little protected, depending upon simulation for their safety.

Let me beg THE OSPREY for space to close this short sketch by reprinting a Horned Lark ode, in part set to the metre of Longfellow's *Auf Wiederseh'n*, and published in one of the closing issues of the "O. and O.":

When February yields,
From lanes and furrowed fields,
Her billowy drifts of January snow,
And softening south winds blow,
The lark, with clear, exhilarating notes,
Exultant as she sings, and singing floats
On poised and fitful wings,
Her spring-time message brings.

In stubble fields at rest,
She builds her snow-girt nest,
And broods her eggs, while blustering March
winds blow,
Yet softer, milder grow;
Then feeds her young, frail, hungry, clamorous things,
Quaint emblems of the fruitage summer
brings,
When showers of April rain
Have kissed the growing grain.

CHICKADEE HABITS.

By C. H. MORRELL, Pittsfield, Maine.

In summer the Chickadee is modestly unobtrusive. Other birds with brighter plumage and sweeter songs throng wood and meadow, challenging the interest of the observer and attracting his attention in many varied ways that make the summer days seem all too short. But when the frosts of early winter have driven our summer birds from the State of Maine to a more genial Southern clime, our little friends, no longer unobtrusive, become the most noticeable of our winter birds. Then, their's is often the only bird voice to echo through the leafless trees and across the broad expanse of snow. They are the wood-chopper's companions, busily moving through the trees, scratching among the scattered chips, or gathered about the camp door to feast upon scattered crumbs. They are usually found in small flocks and, especially toward spring, are often accompanied by Nuthatches, Kinglets, a Brown Creeper and

Downy Woodpecker or two, all busily searching for food and constantly uttering their notes. As spring approaches their conversational notes become more varied, and now is most frequently heard the note which may be called their song, the "soft elfin whistle," usually described as consisting of two notes, but more often heard with three intonations, to my ear like "fwe-e-e-fwer-r-ter."

In THE OSPREY (Vol. 1, No. 5, p. 65), Mr. Hoag mentions their habit of carrying a substance to a limb in their claws, there pecking it apart in search of food. I have noticed this habit many times. I remember in particular, one bright winter day when I had an excellent opportunity to observe this trait. We were at dinner in camp in the woods. The day was pleasant; the camp door was open, and about it was the usual company of Chickadees, searching for scattered crumbs. A quantity of baked beans had been thrown out and lay

on the snow, frozen in small lumps. The Chickadees would seize a small lump of perhaps two or three beans, fly to a limb with it in their claws, and holding it firmly against the limb, usually with one foot, would peck it vigorously, striking between the widely-spread toes. So energetic were the blows that I remember thinking: "If you should miss your aim, little fellow, you would certainly be minus a toe!"

In the spring of 1893 I first noted another habit which shows the Chickadee's intelligence. Around the shore of a pond, in some places, is a fringe of small trees—poplar, fir, birch, alder, and numerous white maples. I noticed that the Chickadees were in plenty among these trees, but thought nothing of it until my attention was attracted to the small maples, many of which had a wet streak, as of water, running down the trunk. Closer examination revealed the fact that the stream was sap issuing from two or three small, oddly-shaped punctures through the bark. As I stood wondering what could have made them, a Chickadee alighted a few feet from me, and, clinging to the trunk, straightened back and struck two or three strong, slanting blows in Woodpecker fashion with its bill. Immediately a small stream of sap issued from the wound and coursed slowly down the trunk, and my comprehension was suddenly quickened. The Chickadees were tapping the trees! Many of the birds were around the streams of sap already flowing, plainly drinking it, frequently leaving for an excursion through the trees in search of other food, then returning for another drink; and, whenever the flow of sap was not satisfactory, tapping the trees anew. Regularly every spring I have noticed this habit. In 1896 the birds seemed to have a mania for tree-tapping, and there was hardly a white maple along the shore of the pond that was not covered with wounds. Usually only two or three punctures were made in one place. On one small limb about an inch in diameter, in a length of fourteen inches I counted ninety-five distinct punctures; but many of them did not penetrate the bark and no sap flowed from them. So great a number so close together is unusual, and very likely the bird made them merely for amusement. I closely examined the other trees to see if any but maples were marked, but could find none. A number of maples that had been killed by the water were also unmarked, though they closely resembled the living trees. I wonder when our intelligent little friends I learned to tap trees, and which trees to tap.

Nesting operations are commenced late in April. The birds almost invariably excavate the nesting cavity, rarely using a natural one.

I think the cavity is used but once, a new one being made every season. Young growths and bush-grown pastures, in which are small dead stubs and old rotten stumps, are preferred to large woods, and no preference is

shown for a locality near water. The small dead poplar stubs in the young growths are most frequently used, though nests are often found in stumps so rotten they may be easily pulled to pieces. The cavities are found at heights varying from one to fifteen feet from the ground, and are from six to nine inches in depth. Whenever the stub selected is firm enough, the birds excavate a neat cavity, with smooth, round entrance and well-chiseled walls; but most holes are made in wood too rotten for good work. Frequently very small stubs are used. A nest found June 4, 1896, was excavated in a white birch stub so small that the wood and inner bark was entirely removed from one side, the outer bark only forming the wall. The eggs were hatching when found, and the bird allowed herself to be stroked on the head and back before leaving the nest. The only nest in a natural cavity I ever saw was found by a friend May 31st. It was in a small poplar tree so well seasoned as to be very hard. The cavity was so small that the eggs were laid in two layers, four on the bottom and three on top. The three were much incubated, but the lower layer had evidently not received sufficient heat, for the four eggs were addled. This nest was almost entirely built of fur well felted, and how the bird ever wove it, or sat on the eggs in such narrow quarters, is a mystery to me.

One rainy day I was returning from a trip afield, during which I had become well soaked with rain, and while sitting on a knoll in a young growth to empty the water out of my boots, I noticed a pair of Chickadees digging a hole in a stub just in front of me. The birds were working quite regardless of the rain. One entered the cavity and pecked out a bit of wood, which it carried a short distance in its bill and dropped. While one was carrying the bit away the other dug out another piece which in turn was carried away. Many cavities are made which never seem to be used for nesting purposes. The nest is composed of various soft materials, fur, moss, fine barkstrips and wool being most frequently used. These materials are woven and felted together in the bottom of the cavity. Occasionally a cover is woven into the edge of the nest, which drops down over the eggs, entirely concealing them when the bird is not on the nest. I have found it over fresh eggs, only, and I think it is pushed down into the bottom of the nest soon after incubation commences. The parent bird sits closely, often refusing to leave the eggs until the nest cavity has been broken into. Once established, the birds are very loath to leave their chosen home and will permit considerable investigation before deserting the nest. A cavity broken into before the set is completed may be patched by tacking a piece of bark over the break, and left with reasonable certainty of securing a full set of eggs at a later date.

THE PASSING OF THE BLUEBIRD.

By CHAS. S. REID, Walhalla, S. C.

As I wander among the trees of the forests and along the brooks and hedges, there is one sweet voice I miss from the sylvan chorus which makes the spring day joyful with its music. There, among the shrubs along the brook, are my old friends, Tanagers and Brown Thrushes, busily engaged in their nesting, while ever and anon their clear, sweet notes join the general woodland chorus. Yonder, on the very topmost twig of a large white oak, sits the Mocking-bird, speaking to bird nature in all its many languages. His song sends a thrill of ecstasy through my being which is only increased when the melody is momentarily strengthened by a rare strain from the throat of his cousin-german, the Brown Thrush. Now, a dozen little Warblers join their voices in the choral effort, and the rare medley seems full, but for the absence of one sweet voice—that of the Bluebird, whose clear, liquid trill is no longer heard along the hedges and fences.

Beneath the old apple tree in the orchard, where I once loved to linger, dreamily drinking in the song of the Bluebird as it sat upon the fences, ever and anon darting like a brilliant rocket into the air to catch some unwary insect which its marvelous eye had seen, I linger now in vain. The voice which was once the song-life of the orchard is heard no more; its liquid measure only comes back to me through the blessing of memory's dream, faintly, like an echo, yet soothingly. How its sweetness once thrilled me with its living strength, filling my day dream with music, sighing plaintively when I was sad, trilling blithely when I was joyful; soothing away my sorrows with a song, and voicing my joys in a lay.

Around the hollow of the old gate post and the eaves of the barn where the Bluebirds nested, what a flutter there was at evening when the fledglings began to fly—what rare kaleidoscopic figures of blue and white and gray in the gold of the setting sun; while the strains of many voices filled the evening atmosphere with song!

The Bluebird was our friend; it brought its song to our doorstep to fill us with cheerfulness, while it served us in many ways that we knew not of. Throughout the day it would sit among the shrubs of the hedge or upon

the gate posts and fences, carefully watching our gardens and fields, and freeing them from thousands of insects which come to retard the growth of, or to destroy, the young shoots, buds, or fruits of our cereals and garden vegetables.

But an invincible enemy came from over the sea, invading our fair home of the Bluebirds, waging a war of extermination against them, which has not ceased until now, when the Bluebird is seen no more happily flitting here and there in the sunlight, and the sweet, thrilling song comes no more to our ears, bringing its measure of joy and love. The place of our poor lost Bluebirds is taken by their enemy, the English Sparrows, which, throughout the day, fill our ears with their unorganized chatter. The Sparrows have driven the Bluebirds away from human habitations, far back into the forests, where they have sought the dense shrubbery along the streams for their home, building their nests in stumps and knotholes of fallen and decaying tree trunks. Here they have met with other enemies in reptiles, high waters, and rigidly cold winters, which have slowly continued the work of extermination begun by English Sparrows against the best friend man ever had among birds.

The Bluebirds are gone; they are almost extinct in the middle and central Southern States, and only a few of them are left in extreme southern portions of the States. A few years ago every post seemed to be occupied by a Bluebird, and the atmosphere was mellow with the music of their happiness. But now, while I wander through the wood, despite the efforts of the songsters to enliven every metre of the air with melody, I miss that one sweet voice, and deep sadness fills my bosom when I reflect that the Bluebird is passing forever—that in a few more years its voice will be no longer heard in any portion of our land, which, though so rich in all things else, will then be so much poorer in the loss of the beautiful, sweet-voiced Bluebird.

[We can comfort the author of this lamentation by the assurance that the case is not so bad as all that. English Sparrows harass and drive away Bluebirds, and many of them are sometimes killed by stress of weather; but *Sialia sialis* is in no present danger of extinction.—ED.]

NOCTURNAL MIGRATION.

By O. G. LIBBY, Madison, Wis.

In a recent article appearing in THE OSPREY, the poet Longfellow was made to appear in the unwonted role of scientific observer. The following stanzas from his poem on "Birds of Passage" contain the evidence for this rather remarkable generalization:

"But the night is fair,
And everywhere
A warm soft vapor fills the air,
And distant sounds seem near.

"And above, in the light
Of the star-lit night,
Swift birds of passage wing their flight
Through the dewy atmosphere.

"I hear the beat
Of their pinions fleet,
As from the land of snow and sleet
They seek a southern lea."

It must be evident to anyone not anxious to prove a point that the poet is here not at-

tempting to add to our stock of scientific knowledge, or betraying any special power of careful observation. He is simply seeking for the appropriate vehicle to convey to us in pleasing form some poetic ideas of his own. For a Cambridge resident, so near the coast line, along which the great migrating armies of the water birds move, no observation on his part would be necessary to obtain the few facts on which to base the references to birds in his lines. It would be a matter of local information known to any and all of the coast dwellers, and indeed, those much farther inland. His line—

"A warm soft vapor fills the air"—

can hardly be distorted into a statement as to the atmospheric conditions most favorable to migration, since the flight must have begun hundreds of miles further north, in a region totally different.

But the best evidence of the unscientific nature of the poem is to be seen from the lines:

"I hear the beat
Of their pinions fleet."

Does Longfellow mean to tell us that the wing strokes of migrating birds are audible to an observer upon the earth? Is he not rather referring to the sound of the wings of the low-flying water fowl of the locality as they move about in search of food or resting places? The absurdity of ascribing scientific value to a poem of this kind must be apparent to all.

But if the poet had really wished to find poetic expression for something surpassingly marvelous in nature, he could hardly choose a richer field than this. There is scarcely a single phenomenon in animal life having greater possibilities alike for the scientist and the poet. For the former the economic value of birds, their wonderful adaptation of organs to environment, their unusually high mental endowments, all make their semi-annual migration a matter of the greatest scientific importance, full of unsolved problems. The poet, on the other hand, is appealed to on the aesthetic side. The song, color and motion of birds display a beauty unique in nature. The strange, half-human, domestic life of a bird in its severe struggle for existence amid the play of endless forces, physical and spiritual, upon such a delicately organized being, suggests inexhaustible possibilities. For either poet or scientist, the southward rush of the great bird armies and their persistent return movement north again, is a natural phenomenon on the grandest scale. When, in the middle of September, the calls of passing birds sound on, night after night, from twilight to dawn, one gets a faint impression of the numbers of the moving flocks. And a more careful observation will soon reveal a marvelously complicated series of calls of every pitch and quality, that tell of more than mere numbers. But though the ordinary nocturnal flight of

birds is rather quiet, disturbing causes often reverse this rule. The writer recalls vividly an experience one May evening in the height of the spring migration. A heavy rain had come on about 9 o'clock, and the bewildered birds overhead, losing their bearings completely, floated helplessly about over the city, confused by the glare of the electric lights, uttering cries that were all but human in the emotions they apparently expressed. The soft, clear note of the Rose-breasted Grosbeak, heard best during the fall migration, is something well worth listening half a night to hear in its perfection. It seems to express the essence of a young bird's first bewildering surprise at the strange and thrilling experiences of a southward flight in darkness, and to contain, besides, the cheery, stouthearted optimism which sustains it through all the perils of the trying ordeal.

The bird-calls to be heard during the migrating season, are, after all, but a crude means of gauging the magnitude of their movement, or of ascertaining its more essential characteristics. If a small telescope be turned upon the moon during the nights of middle September, the passage of birds across its face will furnish a more accurate measure of what actually takes place. A series of such observations for both spring and fall enables the writer to speak with some certainty about this interesting subject. The general statement that the migration is more compact and unified in the fall than in the spring is confirmed by the results obtained from these observations. No birds were observed in March, many were seen in April, and about the same number for May. The migration in the fall appeared to reach its climax about the 15th of September, when twice as many birds were counted as for periods two weeks before and after this date. This method can, of course, be used only on clear nights, but the counting of bird-calls on cloudy nights will furnish some measure of the migration, even under such unfavorable conditions. On nights when most birds can be seen through the telescope, the fewest calls appear to be heard. These calls, however, seem to increase in number toward morning, and as the direction of flight seems also to change at that time, the two phenomena may mutually explain each other. It is obvious that there is here an opportunity of recording what has up to this time almost defied record—the number of birds moving for a given time, and the nature of their flight. The identification of species, while not impossible, is exceedingly difficult, owing to the rapidity with which the birds pass across the field of vision. But enthusiastic amateurs have accomplished much in the past and they will accomplish much more in the future. Their aid is invaluable in arriving at accurate and complete information of this wonderful and almost unknown movement of our birds.

THE OSPREY.

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APRIL, 1899.

No. 8.

Editorial Eyrie.

We are asked to define our position and state whether we stand for the Protection of birds with a big P, or the Destruction of birds with a big D. We trust that the columns of THE OSPREY have already shown that we stand both for the protection and for the destruction of birds. Circumstances alter cases. Under some circumstances birds should be destroyed; under others, they should be protected. We can put the whole thing in a nutshell, which we leave to be cracked by our readers according to their inclination or ability:

1. Birds must and shall be destroyed by the acts of God, such as stress of weather, snakes, monkeys, cats, foxes, skunks, weasels, hawks, owls, crows, jays, and numerous other destructive natural agencies ordained by Divine Providence.

2. Birds must and shall be destroyed and deprived of their nests and eggs to any extent which may be necessary and proper for ornithological and oölogical purposes.

3. Birds must and shall be destroyed for legitimate sport, under the provisions of the game laws in force in any State or territory.

4. Birds must and shall be destroyed for economic and commercial purposes, the flesh and eggs of some birds being among the most important food-products of the United States.

On the other hand—

5. Birds must and shall be protected from wanton, cruel, needless, unseasonable or illegal destruction of themselves or their eggs.

Regarding the first of these propositions, THE OSPREY does not concern itself particularly with the acts of God. They are beyond the scope of this magazine. It is not in the special confidence of the Almighty, as some journals seem to think they are, nor does THE

OSPREY ever fly in the face of Providence. We give God credit for knowing what He was about when He made things, and for ability to mind His own business without our assistance. So we never presume to give Him any advice, or make any suggestions which can be regarded as reflecting critically upon the course of nature which He has ordained.

Proposition 2 is something with which THE OSPREY concerns itself very particularly. This is an illustrated monthly magazine of popular ornithology, which knows perfectly well that ornithology can not be successfully studied and promoted without a reasonable amount of bird killing and egg robbing. THE OSPREY advocates the killing of birds and the taking of their eggs to any extent which may be found necessary for proper ornithological and oölogical purposes. This magazine will continue, as heretofore, to record the operations of field naturalists, collectors, and all others properly interested in the pursuit of ornithology for its own sake, whether such operations are conducted with the shotgun, climbing irons, and egg drill, or with the opera glass, kodak, and a green cotton umbrella. It will print articles descriptive of birds and their nests and eggs, even though the birds have been killed and their nests and eggs stolen in order to make such contributions to ornithology possible. If this should harrow the souls of supersensitive people and set them to shuddering over "bird murdering," "egg hogging," and all that, we should advise them not to read THE OSPREY. Why not stop taking a magazine accused of being "gory" and cruel and wicked? Because this magazine is neither "gory" nor cruel nor wicked; because nobody who is interested in birds in any way can afford to be without it; because it is a popularizer of the science of ornithology, and an educator of the people in that science, and a pleasure giver to thousands who love to study birds and wish to be helped in that study; because it is conducted by men with no nonsense about them, who know what they are about, and do not propose to be bothered by sentimental faddists affected by an itch for notoriety or an impulse to reform everybody but themselves; because THE OSPREY flies on balanced wings of fearlessness and truthfulness, freighted with all the good fish it can catch and carry.

Our third proposition is a sort of corollary of the second. THE OSPREY stands on this proposition with such journals as Forest and Stream, for example. It stands for healthy, manly sport with rod and gun in due seasons, under reasonable legal restrictions. It stands for rigid enforcement of salutary game laws throughout our land. It stands for punishment of pot hunters and other law breakers. It protests against the prostitution of field sports to cruel, wanton or indiscriminate killing.

There is a point about our fourth proposition which may strike some persons with all the force of novelty. Such are those who seem to fancy that it makes a great difference what birds are killed. So it does, to the bird which is killed; but the person who sits down to scold the collector for killing a certain bird

and taking its nestful of eggs has very likely dined on roast chicken and breakfasted on boiled eggs. Millions of birds are reared and fattened for no other purpose than to have their necks wrung or their heads chopped off and their bodies used for food. Millions are kept to be daily robbed of their eggs and seldom permitted to indulge the holy maternal instinct. Why do not the Audubonian societies and other well-meaning persons protest against this one of the most important industries of the United States, which annually involves more "bird murdering" and "egg hogging" than all other destructive agencies combined? Why this discrimination against the turkey, the goose, the duck, and the barnyard fowl, in favor of the thrush, the finch, the wren, the warbler? All are alike the handiwork of God; and the life of the old yellow hen in the barn is doubtless as precious in His sight, to say nothing of the hen's, as that of the daintiest song-bird. Ponder these things, brethren, and sistern, too, and then tell us if you do not find just a hint, if not a pretty big chunk of twaddle, humbug and cant in much that is now written about the Protection of birds with a big P. Don't try to teach your grandmother to suck eggs, and don't mourn because you can't enlighten her on the subject. Protection, like charity, should begin at home; right in the poultry yard; then extend to wild game birds, under wholesome laws against unseasonable and unreasonable killing; and then cover with its broad mantle of humanity the very few other birds which fall victims to the arrant ardor of the errant schoolboy in his thirst for adventure and knowledge, the sometimes selfish and thoughtless collector in his acquisition of specimens, the sometimes one-sided or narrow-minded ornithologist in the pursuit of his favorite science.

The moral of this fable is that persons who have had boiled eggs for breakfast or roast chicken for dinner should be expelled from Audubon societies and compelled to remember that schoolboys, collectors and ornithologists are a part of the Divine scheme of the universe.

Our last proposition, No. 5, is in fact already sufficiently supported by what we have said before coming to it; but if it were not thus attested, it would speak for itself. To our mind, it goes without saying; it is axiomatic and needs no demonstration to any sane, humane and mature mind. Personally, we may say for ourselves, that we believe cruelty is utterly foreign to our nature; we shrink from inflicting pain, even as we do from enduring it; we love birds with a love that sprang up in the heart in our childhood, and is fostered in our mature years as a precious possession; we have not killed twenty birds in the past twenty years, and probably never stole a thousand eggs in all our life. Very likely we shall never take a bird's life again, in the egg or out of it. But for all that, we are the friend and helper of every boy who wishes to make a cabinet of eggs or skins; we stand by every collector who takes birds or their eggs for proper purposes of ownership, study, exchange, or sale; and, of course, we applaud

every ornithologist who kills or otherwise acquires what specimens of birds and their eggs he needs for scientific purposes. Human beings are so constructed that there are needs of the head as well as of the heart and stomach. Let the thirst for knowledge be slaked, even though some bird-life be sacrificed to that end.

A little more knowledge, a little more common sense, a little more shrewd philosophy and mother wit might stop some of the contortions of the protectionists, and make them more seemly objects to contemplate. They are not all women, either—plenty of hysterical males are subject to the same changes of the moon. We know one of them who addressed an "Audubonian" letter to his "Dear Sister in the Protection of Birds." Dear Sister in Christ! It is enough to make old Audubon turn in his grave. He was a crack shot, who spent his life in shooting birds and robbing nests, as long as his eyes would let him look along the midrib to the foresight of his double-barreled death dealer. He was a splendid ornithologist—no mawkish nonsense about him. And how about a man who cries—

"I shall not have lived in vain,

If I but help one fainting Robin
Back to his nest again!"—

especially as he gets the gender a little mixed. The vision of a fainting Robin being assisted to his, her, or its nest by a gentleman from Nebraska is entrancing, but we think he had better saw wood and say nothing till he gets over his namby-pambyishness.

No; we have not named all the birds without a gun; and what is more, nobody ever did, and nobody ever will. Hear, then, the conclusion of the matter: Let birds be protected when possible; let birds be destroyed when necessary.

PARABLE OF THE CLEVER KID AND HIS AGED SIRE.

"I say, guv'nor," remarked the Clever Kid, carelessly, as he was blowing some eggs, "have you seen the latest thing out in ornithology?"

"Probably not," replied the Aged Ornithologist, who had one foot in the grave and the other almost there; "science is progressive, the laborers are many, and no man knoweth what a day may bring forth."

"Jus' so," said the Kid, "but I can put you up to date. It's no joke, I can tell you. Some woman's been writing about a man that was so mean he mixed sawdust with the meal he fed his hen on, and she hatched twelve eggs."

"I see nothing remarkable in that, my son," answered the Aged Sire. "Inform me further of your ornithological data."

"Well, you see, pa, the woman says that eleven of those chicks had wooden legs and the other one was a woodpecker."

"Ah!" said the Aged Ornithologist, as a faint gleam of intelligence flickered across his sad, worn face: "I perceive, my son, that you have been reading the Audubonian department of Bird-Lore."

"I adore that Clever Kid," writes one of our most adorable readers; "he is worth \$1 a year all by himself." We hang our head with averted eyes, striving to conceal the blush which mantles the cheek of our youthful innocence. "But who is he?" Well, in strict confidence, we may say he is our office cat, and she is of the feminine gender. Her real name is Through much-Tribulation-ye-shall-enter-the-kingdom, but we call her Tribby for short.

Letter Box.

A PROTEST AGAINST CANON XL.

NELIGH, NEB., March 16, 1899.

EDITOR OF THE OSPREY:

I am not at all in sympathy with those who uphold Canon XL of the A. O. U. Code. I am insufficiently versed in Greek and Latin to tell whether a name is correct or not, but I am content to follow the judgment of those who do know. I write *Myiadestes townsendi* because it seems to me more nearly correct than *Myadestes townsendii* of the A. O. U. Check List. I desire to follow proper usage, but do not always know whom to follow among conflicting authorities. I am convinced that the A. O. U. is wrong in a great many cases, however. It would greatly please me, and undoubtedly many others, to have a new Check List with strictly correct names.

Respectfully yours,

MERRITT CARY.

[Our correspondent modestly voices the great and growing discontent with that canon of the A. O. U. Code which seeks to force bad spelling upon the ornithologists of America, under the specious but futile plea of "stability of nomenclature." Canon XL dictates that wrong names shall be perpetuated, for no other reason than that they have been wrong from the start. A more glaring absurdity would be hard to find. Error can not prevail over truth in the long run. Well-informed and self-respecting ornithologists refuse to be bound by such foolishness, and thus Canon XL defeats its own purpose. It must be expunged from the Code, and all the verbal atrocities it has inflicted upon the Check List must be expurgated. When the A. O. U. committee does this, and learns to spell names correctly, then stability and uniformity will be brought about, not before; for we shall all be glad to be bound to the right instead of the wrong names, and will use the former with entire unanimity. We are glad to be able to assure Mr. Cary and others who are interested to be set right in this matter, that the new (third) edition of the Coues Check List, prepared to accompany the next edition of the Key to North American Birds, will set an example which may be safely followed.—Ed.]

SNOWY OWL FROM LIFE.

MINNEAPOLIS, N. D., Feb. 4, 1899.

EDITOR OF THE OSPREY:

I enclose a photograph of a captive Snowy Owl. This bird was slightly stunned by a charge of shot at long range, and bought by me this winter from the rancher who captured it. I could discover no trace of the shot. Confined in a big box cage without floor in the open yard, it appeared rather more resigned to confinement than some species, like the Black-bellied Plover, Carolina Rail, American Bittern and others formerly occupying the same quarters. Like all members of its family, its food was restricted to flesh, but I never succeeded in witnessing the act of eating. Mice seemed to be a favorite food, fresh beef was freely devoured in secret, but liver was refused entirely. I thought I had some evidence that it was given to eating snow. The mercury fell to 30 degrees below zero, but I could not discover that the bird noticed this, although one end of the cage was entirely open, except for the slats nailed across. On seizing it firmly by both feet and holding it outside the cage, so as to permit free use of the wings, its lifting power was surprising, and I should judge it might have easily borne away a jack rabbit equal to itself in weight. Judging from its great size it was a female. I am sorry that the bird opened her mouth and dropped her wings at the critical instant, but this was due to her excitement and fear, while I was getting her posed and secured properly.

Yours truly,

EUGENE S. ROLFE.

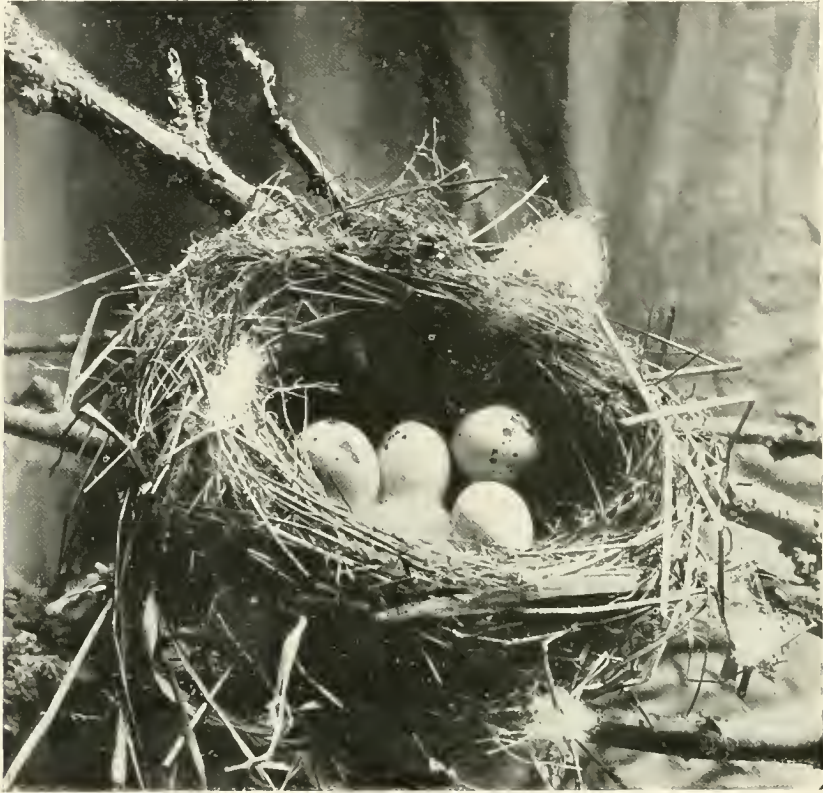


SNOWY OWL FROM LIFE.

Pigeon Holes.

NEST AND EGGS OF THE ALDER FLYCATCHER.—The plate of this object herewith presented is made from a handsome photograph by Mr. O. W. Knight, of Bangor, Maine. The illustration speaks so well for itself that the lack of manuscript to accompany the picture is not pro-

hibitive of its publication. As a rule, however, we hope our contributors will send text with the photographs they are good enough to give us, and thus save us the appearance of such a perfunctory note as this one.—ELLIOTT COLES.



NEST AND EGGS OF THE ALDER FLYCATCHER.

In the Osprey's Claws.

THE UNIVERSITY OF NEBRASKA, Department of Entomology, Ornithology, etc., issues Special Bulletin No. 3, no date, being a plea for the protection of our birds, by Lawrence Bruner, professor, with the request, "Please read it." We have read it. E. C.

BULLETIN OF THE COOPER ORNITHOLOGICAL CLUB.—Vol. I, No. 2, for March-April, 1899, mailed March 15. Our esteemed contemporary—say rather our esteemed predecessor, because THE OSPREY is never out on time—keeps the good pace set at the start, appearing promptly, with an excellent and varied table of contents, well up to the mark of active practical and practicable ornithology. Among leading articles are those upon the Rhinoceros Auklet, Audubon's Hermit Thrush (named *sequoiensis* by Belding a few years ago), Water Ouzel, California Condor and other Rap-

tores; and including a biographical sketch with portrait of W. Otto Emerson. The usual notes are now gathered under the head of Echoes from the Field. Two birds are described as new subspecies—*Dendroeca coronata hooveri* and *Melospiza fasciata ingersolli*. We have to thank Mr. Barlow for some pleasant words, and reciprocate the compliment. Perge modo.—E. C.

EVOLUTION OF THE COLORS OF NORTH AMERICAN LAND BIRDS, by Charles A. Keeler.—Occasional papers of the California Academy of Sciences, III. San Francisco, January, 1893. 8vo, pp. xii, 361, pl. xix.

THE OSPREY is so full of matters of instant interest that it can seldom pause in current affairs to take up for review a book of past years. But this magazine is ever on the alert to see that justice is done where a wrong has

been committed; and it is never too late to mend the manners of an offender. The particular case we now have in hand comes up opportunely in connection with Mr. Birtwell's study of aptosochromatism in the present number.

Early in 1893, when the present Director of the Museum of the California Academy of Sciences was younger than he is now, he published a remarkable book, the title of which is above cited. This work was not free from errors of fact; it was vitiated to some extent by sheer exuberance of youthful ardor; but it was set forth with genuine modesty, with entire originality, in a tentative, appealing, yet singularly effective manner; in fine, with all the defects of its qualities, it bore the stamp of genius. A very young man ventured a piece of pioneering in a very large and intricate field, and found a way which some older and wiser heads had sought in vain. Sometimes he seemed to be lost, but he kept on, and was rewarded at the end by the cordial greeting of such men as Alfred Russel Wallace, G. J. Romanes, and E. D. Cope, who recognized the ability, the candor and the industry of the author, as well as the value of the results to which these good qualities aspired. Mr. Wallace and Mr. Cope both reviewed the work favorably; and Mr. Romanes wrote to the author as follows, under date of May 31, 1893: "I have now read it all, and with the greatest interest. Part I is a singularly able and impartial review of the matter with which it deals, and gives me individually some valuable hints touching further presentation of my own views. But, good as it is, Part II is greatly better, as showing the powers of an ardent investigator, and not merely those of a diligent critic. To me it seems a solid piece of zoological work, as important as it is arduous. I sincerely congratulate you on its accomplishment."

Why, then, has such a work been almost entirely ignored by American ornithologists? Simply because it was supposed to have been killed by a writer in the Auk, April, 1893, pp. 189-195, over the initials "J. A. A." The author made a spirited defense, *ibid.*, October, 1893, pp. 373-377; but it proved of little avail, as it was repulsed with a second show of killing the book, *ibid.*, pp. 377-380, also by "J. A. A." Mr. Keeler's case was thus hustled out of court, by right of might, and how it appears at present, at least to the defendant, may be shown by extracts from a letter addressed by him to the present reviewer, dated Berkeley, Cal., March 2, 1899:

"Dr. Allen did not treat me fairly or honorably in his reviews, and I have always believed that some day justice would be done in the matter. * * * I was young when I did the work, and it has many of the faults of youth. The preface, however, stated very clearly its tentative character, and I have always welcomed honest criticism. There is little save the most fundamental principles that is final in science. Like life, it is a process of evolution, and the survival of the fittest. Those of us who are anxious to have truth prevail over error should, therefore, be glad to have our false theories replaced by truer ones, but this

can never be accomplished by denunciation. Many of the theories advanced in my paper have never been discussed, for no one has had the courage to defy the bitterness of Dr. Allen. In the one point which has received attention, the change of pigmentation in the feather, Dr. Allen has been proved to be in the wrong. Yet neither he nor Mr. Chapman has had the grace to admit the point."

Ay, there's the rub! We are too old to take quite so tragic a view of the situation as may be forgiven in a much younger author, still smarting under a sense of wrong; but we do know that a great injustice was done Mr. Keeler through the sheer ignorance of "J. A. A." of some of the well-known facts of aptosochromatism. Whether "J. A. A." is better informed now than he was in 1893 we do not know; but he has never acknowledged his error in print, nor offered to right the wrong done Mr. Keeler. His attitude reminds us of a story we heard about an old lady who persisted in a course of life which her spiritual adviser regarded as worldly and wicked. When he labored with her, and quoted the Gospel of St. John to convince her, she said: "If John had stopped to think he never would have said that;" and she continued in her evil ways. This is not to compare "J. A. A." to an old lady, saint or sinner, but to intimate that if he had stopped to think about aptosochromatism long enough to learn as much about it as Mr. Keeler knew in 1893, he would never have said what he did when he tried to down Mr. Keeler's book by dogmatic denial of its many merits.

The question of "courage to defy" such a review of Mr. Keeler's book as "J. A. A." penned strikes us on the funny-bone, and makes us laugh. Yet there is a serious side to it, for there is a mistaken notion in many minds that a review in the Auk carries the whole weight of the American Ornithologists' Union. But that is absurd; no review in the Auk carries any more weight than that of the individual whose initials authenticate it. We have ourselves written a great many such reviews, which are worth precisely what the opinions of "E. C." may be worth. "J. A. A." is in like case; and the fact that we pay him \$300 a year to run the Auk adds no weight to his views on any ornithological subject. We have critically examined his two attacks upon Mr. Keeler's book, with the result that we think Mr. Keeler knew in 1893 a great deal more about the evolution of the colors of North American birds than "J. A. A." has ever discovered—or, at least, disclosed to us. We do not accuse "J. A. A." of dishonorable dealing with the book; we find that he simply abused it according to the measure of his ignorance of the subject, meaning well, perhaps, but succeeding very badly if he tried to be fair and candid. Hell is paved with good intentions, they say, but if so, it makes a devilish bad way to go. "J. A. A." seems to us to have been dazed by the novelty of many of Mr. Keeler's facts and theories, the originality with which they were set forth, and the traces of genius running through the whole work; and, in this frame of mind, was incompetent to handle the book judiciously. "Who

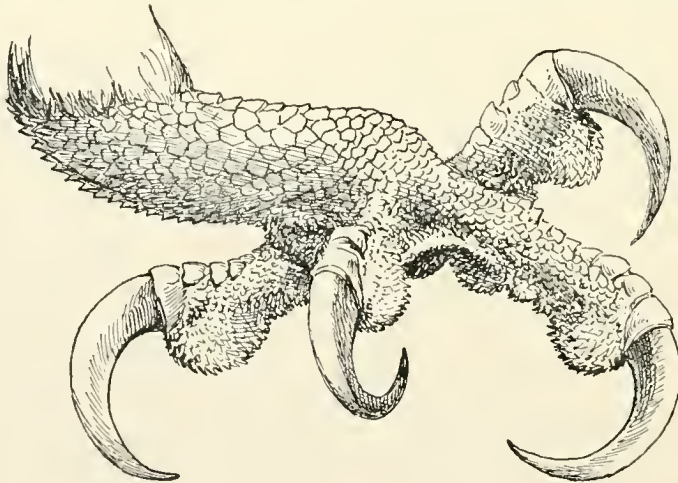
is this young fellow from the wild and woolly West who dares to make statements new to this office, who has the audacity to express opinions without our knowledge and consent, who ventures to speak of color change of plumage without moult, of pigmentary alterations—in a word, of aptosochromatism? 'Sdeath! Hand me my snickersnee, Chappie, old boy, and his scalp shall hang in our lodge, if you will back me up!"

But perhaps we have let our imagination run away with us, for "J. A. A." is well known to be the mildest-mannered man who ever cut an author's throat or scuttled a book. This will be obvious to any discerning reader of the way he undertook to demolish Mr. Keeler. The attack was covert, stealthy, shifty, evasive, with many a hum and a haw, a show of sorrow for his intended victim, and an appearance of that sort of fairness which consists of a pat on the head and a stab under the fifth rib in alternate paragraphs. This is not the sort of criticism to carry weight; it simply signifies that Mr. Keeler's book was too much for "J. A. A." to digest without a fit of bilious colic. The worst symptom of this indigestion was, that "J. A. A." left his own views on the subject as clear as mud. We find it impossible to discover what he really knew or thought of aptosochromatism; we simply see him sitting on the fence, shying rocks at Mr. Keeler, but ready to shuffle down on either side of the fence, according to which side the cat should jump in future.

For example (Auk, April, 1893, p. 192), "J. A. A." cites a certain passage in Mr. Keeler's book, pp. 159-161, from which "J. A. A." says, "one would infer that the feather first grew to its proper size and form and was then decorated by the subsequent deposit of pigment." We have read pp. 159-161 without making any such ridiculous inference; very likely "J. A. A." is the only one who ever did so. "J. A. A." simply misunderstands his author, and abuses him on the strength of that misunderstanding. Again, he quotes a statement from Mr. Keeler, p. 177, and cries out,

"Is it possible that Mr. Keeler is unaware that the tip of the feather forms first, and receives its pigment and markings, whatever they may be, before the middle and lower parts of the feather have passed beyond the gelatinous stage," etc. To which we reply, No; it is not possible that Mr. Keeler should be unaware of that; but "J. A. A." tried to make him out as ignorant as all that, and triumphantly added, "this being the case, it is needless to discuss 'lines of least resistance,'" etc., thus waving the whole matter aside. This is a stale old trick of reviewing, namely, misunderstand your author through honest ignorance, and abuse him on that misunderstanding; or misunderstand him wilfully, and abuse him disingenuously. We give "J. A. A." the benefit of the doubt in this case; but the dilemma is an awkward one.

We intended to write a review of Mr. Keeler's book, but find that we have been too busy reviewing his reviewer to leave room for what we should like to say by way of commending its many merits. We are sorry that the case is one that compels us to be so severe upon "J. A. A.;" but he is solely responsible for that. We did not make up the case; we have taken it as we found it, and shall feel amply repaid for a task so distasteful if what we say shows that Mr. Keeler's work has been disingenuously or ignorantly condemned. The case obviously requires a rehearing, and is to be finally decided upon its merits. Those of our readers who are interested in the important subjects of which Mr. Keeler has treated should procure the book, study it with care, and come to their own conclusions, without giving undue weight to anything which either "J. A. A." or the present writer has had to say about it. Let "authority" go for what it may be worth—what are the facts? The author himself could desire no more than that his work should be subjected to the closest scrutiny, in order that the errors it may contain shall be done away with, and the truth it may embody be thereby the more clearly reflected from its pages. E. C.





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Original Articles.

THURBER'S JUNCO.

By HENRY W. CARRIKER, Sonoma, Cal.

Among winter arrivals at my home in Sonoma County, Cal., is Thurber's Junco. It arrives early in October and soon becomes common. It is a sociable bird, often seen in bands with various Sparrows. Its food seems to be almost entirely seeds, those of purslain being favorites with it in this locality.

and I had the pleasure of finding two of their nests.

One who has never been in the Sierras can not realize how beautiful they are. In every direction one may glance, the grand forest of beautiful evergreens extends as far as he can see. Compared with these the dull oaks of the



NEST AND EGGS OF THURBER'S JUNCO.

It has a pleasant winter note, which, when the bird is in bands, so blends with the others as to form somewhat of a song. When warm days of spring come it begins to be less common, and by May all have departed for their breeding grounds. Before 1897 I never had the pleasure of meeting these birds in their homes, but from June 7 to 15 I was in the Sierras of Eldorado County, at about 3,750 feet altitude, where the birds were fairly common.

valleys are as glass to the diamond. In the distance the forest seems like a solid mass of foliage, but nearer the observer the beauty of the country is fully displayed. The great firs which for so many years have escaped the fury of the elements tower 200 feet toward the sky, while nearer by the pines, spruces and cedars reach well aloft. Underneath a thick carpet of pine needles is everywhere spread, though in places hidden by that beau-

tiful little species of rose called the Mt. Misery. Various smaller trees are scattered through the coniferous forest, such as black oak, dogwood, and deer brush—the latter a tough little evergreen from four to fifteen feet high, which grows very thickly in some places, and forms a fine breeding place for Warblers and Sparrows. I am wandering from my subject.

The day after our arrival in the mountains Mr. R. H. Beck, a member of the Cooper Club, who had been in the hills for several days, asked us if we would care to see him photograph a nest of Thurber's Junco, which he had previously located. Of course we accepted the invitation, and getting the photo-

songs of our feathered friends. I was familiar with most of them, but occasionally heard one from the tops of the trees which I could not recognize. It resembled the song of the Hermit and Black-throated Gray Warblers. Hearing it again, and seeing the bird about thirty feet up in a pine, I had it shot, and as it fell to the ground I rushed forward to find on picking it up that it was our friend Junco. I found the birds often after this; heard them sing morning and evening, and watched them after sunset feeding on the green grass by a spring near the hotel.

On the 9th, accompanied by Mr. C. Barlow, I struck out through the forest long before breakfast. While going through an opening,



NEST AND EGGS OF THURBER'S JUNCO.

graphic instruments ready, we started for the place.

I will here state that we were stopping at a hotel called Pyffe, on the Lake Tahoe road. After crossing the road we entered the forest and followed a small path for about two hundred yards, till we came to a dry ditch. Going along this ditch Mr. Beck laid down his camera and showed us the nest, which was very well concealed in thick pine needles near the top of the bank. No birds were seen, and as they had been disturbed on several occasions, I suppose the nest was deserted. After photographing it we returned to the hotel.

The eggs, four in number, were handsome specimens, and I determined to secure a set before I left the mountains. Next morning we were out early, and from every side came the

covered with vines and small deer brush. I almost put my foot on a little bird which flew from some ferns near a large pine tree. I recognized it as the Junco, and soon located the nest, which was sunk even with the ground under some fern fronds. It was loosely made of dry grasses and a few bark strips, lined with finer grass, and contained two eggs. On June 12th we took the nest and four beautiful eggs.

The photograph, which speaks for itself, is by Mr. Barlow. An extension was used on the camera, and as a result the nest and eggs appear nearly of life size. The other photograph was also made by Mr. Barlow, and with the same camera, but without the extension, the use of which makes the camera doubly valuable to the collector.

MISSOURI RIVER DUCK NOTES.

By ISADOR S. TROSTLER, Omaha, Neb.

THE following is compiled from field notes which cover a period of twelve years' observation in the vicinity of Omaha, Nebraska. The dates given are earliest and latest dates when the species were observed.

MALLARD (*Anas boscas*). An abundant migrant (and not uncommon summer resident in Nebraska). Arrives in spring Mar. 1 to April 20; departing southward Sep. 20 to Nov. 10. In very mild seasons numbers of these ducks are seen on the Platte River flats in midwinter. Many are killed along the Missouri, Niobrara, Platte, Plattehorn and Blue rivers, and adjoining lakes, sloughs and swamps.

BLACK DUCK (*Anas obscura*). A common migrant, usually in company with Mallards, arriving and departing about same time. Known to sportsmen as Dusky Duck and Black Mallard.

GADWALL (*Chaulelasmus streperus*). A common migrant, and possibly a rare summer resident. Arrives Mar. 20 to April 20. Returns southward in latter part of September and October.

BALDPATE (*Mareca americana*). A common migrant. Arrives in spring Mar. 16, and stays to April 20; and returning southward is found from Sep. 15 to Nov. 10. Baldpates are not usually seen in flocks, but are found with Mallards, and in pairs or two's. They are often seen upon the prairies and in corn or wheat fields in autumn, and are almost always in good condition. Known to sportsmen as American Widgeons, and killed in large numbers.

GREEN-WINGED TEAL (*Nettion carolinense*). A common migrant, Mar. 20 to April 20, returning in September and early October. Large numbers are killed by local sportsmen.

BLUE-WINGED TEAL (*Querquedula discors*). An abundant migrant and not uncommon summer resident and breeder. Arrives about same time as, or a little later than, the preceding species. Breeds in latter part of June. I found sets of 7, 9 and 11 eggs, incubation advanced, in N. W. Nebraska, June 22-30, 1895. Returns southward in latter part of September and early October. Large numbers killed by sportsmen and market hunters.

CINNAMON TEAL (*Querquedula cyanoptera*). A somewhat rare migrant. Seen in company of Blue-winged Teal during migrations.

SHOVELER (*Spatula clypeata*). A common migrant; a few remain to breed. March 15 to April 10. Breeds June 1 to 20. Returns southward in late September and October. Easily decoyed and killed in large numbers. Known to sportsmen as Spoonbill.

PINTAIL (*Dafila acuta*). An abundant migrant. This is the first Duck to arrive in spring, usually coming in with the early rains and sleet storms, Feb. 22 to Mar. 20; returning in fall Sep. 25 to Nov. 1. Known to sportsmen as Sprig-tail. Easily decoyed and killed in immense numbers for sport and the market.

WOOD DUCK (*Ex sponsa*). A fairly common migrant and not rare as a summer resident in vicinity of timbered lakes and streams. Mar. 25 to April 15. Breeds in June and is seen in pairs and trios all summer. Departs for south Oct. 1 to 20; usually all gone before Oct. 15. Known to sportsmen as Summer Duck.

REDHEAD (*Ethya americana*). An abundant migrant in spring, but not nearly so common in fall. Arrives (usually in large flocks) Mar. 12 to May 10. Latest seen October 12. A few Red-heads probably breed in the northern part of this State.

CANVASBACK (*Ethya vallisneria*). An irregular migrant, being seen in abundance some years and quite scarce in others. A few breed in the northern part of this State. Arrives Feb. 24 to Apr. 20; breeds June 1 to 20, and returns southward in latter part of September and October. Killed in large numbers by sportsmen and market hunters.

AMERICAN SCAUP (*Fuligula marila*). A common migrant, following shortly after the Baldpates in spring, Mar. 20 to Apr. 20, returning in fall Sept. 15 to Nov. 10. Known to sportsmen as Blue-bill, and killed in large numbers.

LESSER SCAUP (*Fuligula affinis*). A common migrant. Seen about the same time as the preceding species in spring and autumn. Known as Lesser Blue-bill.

RING-NECKED DUCK (*Fuligula collaris*). Not uncommon as a migrant, arriving about same as preceding species, Mar. 20 to Apr. 20 and Sept. 15 to Nov. 10, but not so numerous.

AMERICAN GOLDEN-EYE (*Clangula clangula americana*). Somewhat common as a migrant, arriving Mar. 20 to May 15. I have never observed this Duck in the autumnal flights, but they probably return southward early. Known to sportsmen as Whistler and Whistle-wings, and killed in considerable numbers on Missouri River.

BARROW'S GOLDEN-EYE (*Clangula islandica*). A somewhat rare migrant, arriving with and seen in company of the American Golden-eye.

BUFFLE-HEAD (*Charitonetta albeola*). A not uncommon migrant, arriving Mar. 15 to 30 and Oct. 1 to 30. Known to sportsmen by many names, such as Dumpy, Dumpling, Butterball, etc.

HARLEQUIN DUCK (*Histrionicus histrionicus*). This beautiful little Duck is a rare migrant. I know of but three being killed in this vicinity, viz: Two on the Missouri River Sept. 16, 1893, and one Sept. 19, 1895, at Florence Lake, near Omaha.

RUDDY DUCK (*Erismatura jamaicensis*). An irregular migrant. This Duck is the most irregular of all that occur in this vicinity. Some years they are abundant and in other years none are seen. They arrive late, May 1 to 20, and return Oct. 1 to 15.

THE AMERICAN GOLDEN-EYE.

By FLOYD T. COON, Milton, Wis.

DURING the spring of 1895, I had an excellent opportunity of observing the nesting habits of this Duck, being encamped in the northern part of North Dakota, near the famous collecting ground of Devil's Lake. The locality in which our camp was situated was a narrow neck of land between two lakes, about twenty rods wide in the narrowest spot and covered for the most part with a growth of oaks. Among these were some ten or twelve old trees which, being rotted away on the inside and having their tops more or less broken, furnished an excellent place for the nesting of the American Golden-eye.

On the morning of May 14, having been awakened earlier than usual by the incessant screaming of Franklin's Gulls (*Chroicocephalus franklini*), I arose and walked toward an old oak stub which stood about ten rods from the cabin door. Seating myself on a stump, I was observing a flock of Snow Geese as they were leaving the lake, probably for their feeding ground out on the prairie, when, hearing a whir of wings, I saw a female Golden-eye fly straight to the old stub under which I was seated. For some unknown reason the bird failed to notice my presence and alighted on a projecting limb, which was about thirty feet from the ground, and had been broken off about ten feet from the trunk, leaving a hollow of two feet, into which the bird disappeared. After waiting for the bird to reappear, I was about to leave my position, when I observed the male flying toward the same tree into which the female had disappeared. He alighted on the hollow stub, and after a careful survey of the surrounding country disappeared in the same hole with the female. In a few moments he reappeared, and flew off in the direction of the lake.

I waited for several minutes, but as nothing new happened, I decided to explore the inside of the hollow limb and see what it contained. Accordingly, having procured a pair of climbers

and a rope, I reached the hole after much hard climbing. Cautiously I leaned forward and peeped into the cavity. My feelings can better be imagined than described, as I beheld the female sitting on her nest, about two feet from the opening. It seemed strange that the bird should have remained on her nest until I approached so near. However, as soon as she became aware of my proximity, she made haste to leave the nest, and flew off toward the lake.

The nest contained twelve eggs, and was lined with down, underneath which were several Owl feathers, which led me to believe that the same hole had formerly been occupied by an Owl. After taking the dimensions of the nest, I decided to leave the eggs until later, and see if the set would be enlarged. I did not get a chance to visit the nest again until May 16. As I approached the tree the female flew from the hole, and as I was climbing up she circled several times around me. The nest contained twelve eggs, as before, so I concluded to wait no longer, but to take advantage of a good thing while I had a chance. Packing the eggs carefully in cotton, and preserving the lining of down as well as I could, I lowered them to the ground. When I came to prepare the eggs for the cabinet, although I found them fresh, I am quite sure that they were a complete set, as no eggs were added during the three days which intervened from the time the nest was discovered until it was taken. During the remainder of my stay in the Northwest, although I had several chances to observe and study their nesting habits, I regret to say that I was able to take but one set of their eggs.

I should be pleased to see more articles in THE OSPREY on the breeding habits of our Ducks. For example, let some one who has been fortunate enough to collect eggs of the Hooded Merganser (*Lophodytes cucullatus*) give us the benefit of his observations in a plainly written article.

THE WHITE-WINGED SCOTER IN NORTH DAKOTA.

By EDWIN S. BRYANT.

THIS Scoter arrives at Devil's Lake about May 20, and according to my theory comes from the north. It seems to confine itself to one arm of the lake, when coming in near shore. In the many days spent along the shoreline from Minnewakan to Jerusalem, I have seen but a few scattering birds outside the immediate vicinity of this arm of the lake, known locally as Teller's Bay. Reports reach me that Scoters have been seen at other places, but these were invariably within a few miles of this bay, and the birds undoubtedly belonged there.

This bird has some habits unlike those of other Ducks. The most prominent habit is the morning flight. This does not occur so regularly as at first I supposed. But if a person is so fortunate as to be present when a great flight is in progress, he will witness what I consider to be a fascinating picture of bird life on the prairie.

Imagine if you can a body of water some six or seven miles long and two miles wide where

it leaves the main lake, extending northward, bounded on both sides by undulating prairie. Take for a background the steep hills on the far side of the lake, or the heavy timber of Graham's Island—let the time be sunrise, with the dew-drop jewel accompaniment that the poets rave about. Fill the air with hundreds of Scoters, circling and quartering after the manner of Swallows, most of them fanning the weed tops in their flight. Flying by pairs, side by side, and in companies of pairs, they often circle about a person several times, within easy gunshot range; and if one is so disposed, he may shoot a pair with one discharge of the gun, so closely do they keep together. As would be supposed, the white wing-patch is very conspicuously displayed as the birds glide around. In a half hour the performance is at an end.

In two minutes time the scene changes as if by magic. All the birds are making off shore together. With a glass I follow them. Their

dark bodies stand out in contrast with the white-caps, and the flash of a wing-patch against a green wave is the last seen of them as they settle down far out in the lake. Later in the day they will swarm along shore or congregate on the numerous sandy points.

When they arrive they are paired off and associate in groups of three and four pairs. In their flight they go by groups; as they swim along shore or fly inland looking for nesting sites, it is in groups; and they nest in groups. Previous to this year, I came across but scattering nests, which served to give me some insight into the time and manner of nesting.

This season I set about in a systematic way to collect what sets I could, as it would probably be my last chance. With the aid of several persons, during the month of July I secured 21 sets of eggs. No set was taken till three or four days after the last egg was deposited.

They range from four to eleven eggs per set. But most nests contained seven eggs, and were placed in patches of brush, from only a few rods from the lake shore to a mile and a half back. Besides the 21 sets taken, seven others were found, one of which was destroyed by cattle, another deserted, and the remainder were left to hatch. Of 28 nests found, only six or seven were discovered by flushing the female, although in several cases the bird was discovered on the nest. Those only who are familiar with such nest hunting can form a fair conception of the labor involved. To find a Duck's nest thus, means the patrolling of hundreds of acres, peering into each patch of brush or thick bunch of grass. If the eggs lay exposed it would not be so difficult. But when they are covered with dry grass and but little of the tell tale down or feathers, as is the case before incubation com-

mences, it takes a practiced eye indeed. One tract of about forty acres I searched twice without discovering anything. The third time I uncovered four nests of Scoters within a radius of ten rods. The female will not flush till nearly stepped upon. She will suffer you to kneel beside her and part the sheltering weeds. In one instance a sitting bird allowed herself to be lifted from the nest. There were five groups of nests found; one of four nests, three of three each, and one of two. Several other nests were within 30 rods of one another, but these I considered only single nests. A group of nests, in the meaning of this article, was one in which the nests were so close together that they would all come within a circle whose diameter would not exceed 20 rods. One of the three nest-groups could have been placed in a four-rod circle. While females in typical plumage were to be seen, the greater number were not fully clad with the sooty brown dress. The heads of most of the sitting birds observed were nearly white. Many of the males likewise were not in fully matured plumage. The male often escorts his better half to the nest near the close of the day. After much flying about in all directions they drop to the ground rods away and the female skulks through grass to the nest, while the male betakes himself to the lake. When the young are hatched a day or so on the nearest pond is spent; then they are led to the salt waters of the lake. By the last of September the Scoters have disappeared, at least from their usual haunts. Just before the ice closes, about the last of October, a few of the White-winged species are to be seen swimming about in the open water in company with other Scoters and Old Squaws.

A CHAPTER ON THE ROBIN.

By C. O. ORMSBEE, Montpelier, Vt.

IF anyone familiar with the avifauna of New England were asked to name the most common bird of that region, he would not hesitate to declare that the Robin outnumbers any three species; and he might further state that, with the exception of the English Sparrow, no bird is more thoroughly domesticated. Yet in looking over my files of ornithological papers, I find no description of this bird, and few allusions to its habits. It seems to be thought too common to deserve notice. And here let me remark a tendency among naturalists, more especially among amateurs, to neglect common species and study rare ones. This is all very well, so long as they study nature; but when amateurs write of birds they have never seen, copying a portion of their sketch from a cyclopedia, and drawing upon their imaginations for the rest, they impose upon the reader, and lessen the value of the periodical which publishes such a sketch.

The common Robin, called also the American Robin, and Red breasted Robin, and which is *Turdus migratorius* of Linnaeus, and *Merula migratoria* of Swainson and Richardson, is found throughout North America. Its chief habitat, however, is along the Atlantic coast. From all that I can learn, I do not think it is very common west of the Mississippi River.

As its name indicates, it is highly migratory, arriving in this latitude toward the latter part of March, and departing late in autumn. From a record before me, I find that the date of its arrival varies from Mar. 15 to Mar. 27, with an average date of Mar. 23. My own observations have given an average of April 2.

The date of departure is less easily ascertained, but it is several weeks later than is popularly believed. Toward the close of summer they retire to thick and distant woods, and also become exceedingly shy. Hence the supposition arises that they have migrated. I remember once (and from my note-book I see that the date was October 26), hearing a large number apparently engaged in an angry dispute. It was in a thick woods upon the side of a mountain. I approached carefully and saw a flock of about fifty Robins. I was seen almost at the same instant, and the birds disappeared as if by magic. Another time, on November 4, I heard a similar noise, and, approaching more carefully, I was able to secrete myself and watch proceedings without being seen. Most of the birds were upon the ground, and all were in constant motion. I counted 120, and am confident that the actual number was twice as many. It was late in the afternoon when I discovered them, and just as the sun was sinking

below the horizon, they all rose in a body and ascended into the air, until they were lost to view.

From these circumstances, and others of less importance, I am led to the conclusion that the Robin performs its migrations during the night, and at a great altitude. It also seems to be gregarious at this time. A newspaper item, from a correspondent at Stamford, Conn., says that Robins first make their appearance at that place March 22. Here they were first seen, last spring, March 26. This gives them a daily speed of sixty miles, supposing the observations to have been correct. In South Carolina and Florida the Robin is found at all seasons, but it is none the less migratory. The birds which spend the summer in those states retire to Cuba for the winter, while their places are filled by northern birds.

The Robin appears to mate for life, but unlike the Phoebe, which also mates for life, if it loses its partner it is not at all averse to taking another. I remember that a cat caught one of a pair of Robins that had a nest in my garden, and whose habits I was studying. For two or three days the remaining bird cared for its young alone, and then appeared with another partner, who faithfully performed the duties of the lost parent.

If undisturbed in its nesting, the Robin returns each year to the same vicinity, and generally builds its nest a little removed from the one of the previous year. Often it tears away the old nest and builds again in the same location. In a few instances it has been known to use the same nest for several years in succession, but this is not its general custom. The nest is built of bits of hay or straw cemented with a large amount of mud, and is lined with fine soft grass. Its dimensions vary somewhat, but are usually about seven inches in diameter at the base, gradually tapering to six inches at

the top. It is about four inches in height with an interior depth of three inches. Its interior diameter is about five inches. These figures are taken from an actual measurement of a typical nest, but I have never found two nests measuring the same in every particular. I know of no bird that shows greater variety in selecting nesting-sites. I have found its nests in bushes not six inches from the ground and in the tops of trees eighty feet high. Often they build upon fence rails. Frequently they build in bridges, and I once saw a nest in a railroad bridge through which twenty trains passed every day. A favorite nesting place is in some old building; and there is scarcely a dilapidated barn in this state that has not one or more nests upon its beams. Sometimes the nests are cunningly concealed, but generally they are openly exposed, and very frequently in the most conspicuous place possible.

The eggs are four, rarely five, in number and of a deep blue color. They are all alike, though of slightly different shades, and vary but little in size. Both birds assist in incubation, and also in feeding and brooding the young. They rear but one brood in a season; but, if the first nest be destroyed, or the eggs removed, they select another site and try a second, and even a third time. With the possible exception of the Kingbird, there is no bird in Vermont more vigorous in defending its nest, or more noisy in its protestations if disturbed.

It is omnivorous in its habits, and devours grain, seed, berries, worms, and insects with equal relish. The gardener calls it a blessing, because it destroys thousands of injurious insects. The small fruit culturist calls it a pest, because it eats his berries. Both, to a certain extent, are right. A chapter on its food habits would form an interesting study, and constitute the basis of a future article.

BIRDS AS PROGNOSTICATORS.

By H. H. JOHNSON, Pittsfield, Me.

Those of our forefathers who lived in the backwoods had little outside of their daily duties to take their attention. Therefore they noticed more closely the workings of nature and nature's laws. They paid more attention than we of today to chance events.

They associated these events (particularly such as sickness, death, and the changes of the weather and seasons) with the natural happenings of the day. It was from birds more than from anything else that these auguries were drawn. It has been so for thousands of years. The actions of birds were thought to foretell nearly all the ordinary events of life. It is a relic of superstition. It is a mistaken association of ideas. Cause and effect were misapplied. It was thought that a thing that happened *after* another must have happened *because* of that other—*post hoc, propter hoc*. This is well illustrated by Kipling in his *Jungle Book*. Buldeo the hunter tells his neighbors the tiger that carried away the child is a ghost tiger, the body of a tiger inhabited by the spirit of Ran Dass the money lender. Ran Dass was

lame. He was lamed in the riot when his books were burned. The tiger was lame. The unequal print of his pads showed it. Therefore it is a ghost tiger. The tiger's body is inhabited by the spirit of Ran Dass. In reality the tiger was lame from birth. This was long before Ran Dass was injured.

The singing of a Whip-poor-will, on or near one's house, was by many and is even now by some thought to foretell sickness if not death in the family.

The early arrival of spring migrants is a pretty sure sign of an early spring; so too, the early and complete departure of the birds in the fall is a forerunner of an early if not cold winter. I think we are all familiar with the saying about the goose's breast-bone, for how closely have we watched for the breast-bone of the Christmas goose, and when received have deemed it a prize almost equal to the far famed wish-bone; for the amount of whiteness on the bone told us of the amount of snow and hill-sliding the coming winter. And with us here the wild goose is one of the early spring mi-

grates, and the honking of a flock of Canada Geese flying over is a very good indication of the breaking up of the ice and opening of Spring.

I often hear the Snowflake spoken of as foretelling coming snow storms, and on seeing a number of Slate-colored Juncos, or as they are called Rainbirds, people say it will rain.

The Robin is a harbinger of spring, arriving here about the first of April. Often it may be seen on the topmost branch of some tree, singing that particularly resounding note that seems reserved for this occasion, or just before a rain storm; then it is said to be calling for rain. In some localities the Cuckoo is called the Rain Crow for the reason of the notes uttered just before falling weather. The same omens apply to Owls as to the Whip-poor-will; as the hooting of an Owl sitting on top of a house or near a window is said to foretell death. Vergil observed that Owls are more noisy at the change of weather, and as it often happens that patients with lingering diseases die at a change of weather, so the Owl seems, by a mistaken association of ideas, to forbode the calamity.

Our seafaring relatives or friends tell us of Mother Carey's Chicken, the Stormy Petrel; for, as the story runs, this Mother Carey took ship and had as baggage a few crates of chick-

ens. There came on a storm the vessel was wrecked, and the chickens washed overboard, the old lady being washed ashore half dead, on seeing these birds mistook them for her lost chickens; hence the name and sailors' superstition that the appearance of the Stormy Petrel near or under the stern of a ship forbodes coming storms. Those who have read the poem, 'The Ancient Mariner,' will doubtless remember the superstition given in it, as follows:

For all averred I had killed the bird
That made the breeze to blow.

The appearance of the Albatross vouchsafed a change of weather for the better.

It is known that most seabirds except the Petrel, make for shore on the approach of a storm.

Swallows flying low, that is, skimming the ground, are said to indicate rain. Our common Owls come in for their share, too.

During rain if chickens no attention pay,
You may expect a rainy day.

Whereas, if they run to shelter it won't last long.

And to the ornithologist a goodly number of resident spring migrants foretells a successful season.

THE TRAGEDY OF A NEST.

By CLARA C. SMITH, Hartford, Conn.

A PAIR of Orioles built a nest in a tall pear-tree just outside my window. They cunningly swung it at the end of a pendant limb at the top of the tree, where no cat could possibly go. Year after year, for a long time, that nest was occupied. Whether the same pair of birds returned to their old home, or not, of course it was impossible to tell; but, inasmuch as there never seemed to be any commotion in house-hunting, but simply a calm taking possession, I always supposed it was the yearly return of the same family. That, however, would make an Oriole a long-lived bird, which perhaps he may be.

The first intimation of his presence I had year after year, was being awakened some May morning by his music in the trees outside. He seemed always to arrive at night, and was up and at work bright and early the next day, as tho he had never been anywhere else. Thus, for a good many years. In fact it would have hardly seemed spring at all without his pure clear—with sad—notes and bright uniform.

One season, when there were young birds almost ready to fly, there came upon us a severe storm accompanied by a high wind. This was in the night. As I felt my bed rock under me, I thought of the Orioles and wondered if they would weather the storm. It seemed as tho trees must get broken and I knew that the pear-tree was getting old.

I was waked the next morning by most distressing cries; and found, as I had feared, that the bough which had swung the pretty nest for

so long had broken off and was gone. Further search discovered the nest on the ground with three little birds cuddled in the bottom. One was dead, probably killed in the fall; the others apparently unhurt and crying lustily for their breakfast.

Thinking the old birds would know best how to care for them, and being possessed of that good thing, a little boy friend, I fastened some string to the nest and sent him to tie it securely to one of the branches of the tree.

All the time we were at work, the parent birds flew about in the wildest manner, almost ready to attack us, scolding and crying as tho heart-broken.

When, at last, we were thro and retreated to the house to peep thro the blind, we expected to see wonderful manifestations of bird love. Imagine our surprise to find that, altho we watched until tired and kept an eye on them a good part of the day, those wicked birds never once went back to their poor starving babies! The excitement caused by the fallen nest and our rescue of it gradually died down, and peace was at last restored.

When I had finally given up the return of the birds, I climbed a step-ladder and carefully peeped in on the three dead birds. I had noticed that their cries had grown fainter and finally ceased, but could not believe that they would be left to die. Since then, I have heard that birds will sometimes desert their young under such circumstances, but it seems a very unnatural thing.

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Editorial Eyrie.

We are asked by several contributors whether THE OSPREY prefers English or Latin names of birds. We have no preference; contributors will use either, or both, at their pleasure. In the present confused and incessantly shifting nomenclature of the A. O. U., the vernacular name of a bird is often more precise, and therefore more useful, as well as better known, than the technical term. It is idle to look for stability in scientific names till the A. O. U. committee ceases to wilfully mangle so many of them. The idiosyncrasy of the editor of the *Auk* forces the contributors to that magazine to observe certain pig-iron rules of misspelling, and thus become accomplices in the wrong-doing sanctioned by such dubious "authority." THE OSPREY, whatever its own sins of omission or commission, is of course free from this folly. Its contributors will use whatever names they please for birds; and we will see that the technical terms are as correctly spelled as is possible in the present state of nomenclature. We have lately taken the pains to prepare a list of wrong names which occur in the A. O. U. Check-list, and are habitually used in the *Auk*, in order that contributors to the OSPREY may avoid them; and this we will print on the first convenient occasion.

We learn from the New York papers of a recent session of one of the Audubonian Societies, presided over by the cherubic editor of Bird-Lore, presumably assisted by his seraphic staff of sub-editors, and attended mostly by unconverted or incorrigible women wearing feathers in their hats. The treasurer showed a balance of \$111, which was not enough, and Mr. Chap-

man appealed for more. The Rev. Henry Van Dyke sent a letter, in which he is said to have said:

"The sight of an aigrette fills me with a feeling of indignation and pity, and the skin of a dead song bird stuck on the hat of a tuneless woman makes me hate the barbarism which lingers in our so-called civilization."

Now if the Rev. Van Dyke will ask Dr. J. A. Allen or Mr. F. M. Chapman to show him how many dead song birds are stuck in the drawers of the American Museum of Natural History, he will find so many thousand as perhaps to make him hate the barbarism which lingers in our so-called science. What difference does it make to a bird that has been killed whether its skin is on a hat or in a drawer?

What an amount of tommy-rot there is about this whole business! It would not last a week if the people who affect this fad could be cured of the craze of publicity.

Some of the advices which reach us regarding professional bird-protectionists confirm our suspicion that there is a good deal of hysteria and notoriety-itch in their midst. The itch is catching, like St. Vitus' dance; some of these new women need to be inoculated with sterilized lymph, taken fresh from the town pump-handle. We attended a lecture delivered before one of the Audubon societies. The lecturer discoursed eloquently upon ornithological heroes who have gone to their reward, where the operaglasses cease from troubling, and the kodak is at rest. All these women looked bored, but they got furious because the lecturer did not fall prostrate with grief when they crowded around him to tell him how many of their cooks were down with the grippe.

We wish we could discover why women who go to bird lectures are possessed with the single idea of letting the lecturer know how much they know about birds. The instant the speaker stops they make a wild rush for the platform, and all begin at once to tell him that chippies nested on the porch, or swallows in the barn. Then they bring out impossible feathers to be identified, first saying that they are perfectly sure they know what the feathers are. Then the little boys are pushed forward by their admiring mammas, to bashfully confide to the lecturer that they once saw a big blue crane or something. About this time they want the windows and doors open or shut, and the lights turned on or off, before they can begin to tell the lecturer how to run an Audubon society. It is a curious phaze of human nature of the feminine variety. Why women who already know it all should go to lectures is something we leave to wiser heads than ours to discover.

Letter Box.

CONCERNING DR. GILL'S PROPOSED HISTORY.

WASHINGTON, April 29th, 1899.

EDITOR OF THE OSPREY:

I take pleasure in acknowledging the receipt of a number of letters on the proposition to commence soon the publication of a new History of North American Birds, and cordially thank the writers, one and all, for their expressions of good will and offers of help. Two of the letters contain suggestions which call for comment.

A noteworthy recommendation is made by Mr. Frank L. Burns, that a special paragraph should be devoted to the consideration of the bird when at rest. "Inasmuch as the average bird spends one third of its time sleeping," Mr. Burns suggests that "a place be found for roosting, the datum following that on flight." The datum may be added to the others, and the suggestion by Mr. Burns as to its sequence may be adopted.

Another noticeable comment has been made by Mr. Ernest Ingersoll. He asks "in your sequence of data would not it be more natural and philosophical to put 'age of pairing' alongside of the item 'mating,' instead of where it stands?" The question is very natural and proper; but, for my purposes, the proposition is not acceptable. Mr. Ingersoll has butted against a terminologic snag and we will remove the offending obstacle the word "pairing" in one case.

The enumeration of points or data in my "sequence of data" may be segregated into three groups: (1) those relating solely to the morphology or corpus of a bird; (2) those relating to the habits of a bird; (3) those relating to the influence on the bird from external sources or subjectively. In our sequence, the first three categories belong to the first, the succeeding seventeen to the second, and the last to the third of those groups. The last of the second group—"age of pairing"—concludes the history of the young and connects with the mature bird as first contemplated. The word *Adolescence* may therefore be used in place of Age of pairing, and the ambiguity which may trouble others be thus removed. The word "mating" in the second group refers to the pairing of the adults in each spring or after they return to their nesting quarters.

We are much obliged to Messrs. Burns and Ingersoll, as well as to all our other correspondents, for their suggestions and appreciation.

Yours truly,

THEO. GILL.

OLD ORCHARD, MO., April 3d, 1899.

DR. THEODORE GILL:

DEAR SIR:—As you wish to get the opinion of every one, I feel it my pleasant duty to inform you that your proposition of a great work, as set forth in the February OSPREY, strikes me very favorably. In fact, nobody can deny that the want of a standard modern work on North American birds is felt more and more keenly as time and science progress. My views are in perfect accord with everything you say on the subject, and I really admire the wisdom of your plan in its entirety, as well as in all its details.

Most heartily do I welcome, among others, your proposed innovation in the treatment of

the subspecies, and I am sure it will find the approval of the majority of bird students.

What you say of extralimital species is also very pertinent; it is simply incomprehensible how in local lists the old method of placing a stray bird on the same footing with a regular constituent of the fauna could be retained so long. Just behold the absurdity of enumerating the Man-o'-War among the birds of the State of Kansas!

While your timely and excellent proposition by itself merits the lasting gratitude of all interested in North American birds, we would be still more indebted to you, if you would induce our highly esteemed Dr. Elliott Coues to join you in the editorship. I know nothing that would give me more pleasure in looking forward along ornithological projects, and I hope that ways and means may be found soon to carry your plan not only into effect, but also to a most successful end.

As a suggestion, allow me to expressly endorse your statement in regard to the desirability of using quotations from well-known biographies. A large number of passages from the works of early authors have had the misfortune of being quoted several times too often, and though they may be ever so expressive and ornamental, it would be painful to find them cited again in a new work.

Another thing worth mentioning may be the necessity of a correct pronunciation of scientific names, establishing a standard by which we could do away with the present confusion, caused by the use of three different methods, not speaking of those who have no method at all. The pronunciation given in Coues' Check List of '82 should, I think, be accepted and adhered to by all.

Wishing you best success in your praiseworthy endeavor, I am,

Yours truly,

O. WIDMANN.

BERWYN, PENNA., March 28th, 1899.

DR. THEODORE GILL:

DEAR SIR:—Your open letter in the February OSPREY was read with much interest.

I am particularly struck with your suggestions of a complete revision of the *Oscines*, and reduction in rank of "subspecies."

Every student, while in search of special information bearing on the life history of a bird, has felt the need of concise up-to-date biographies under one cover of course with free quotations selected from the best of Wilson, Audubon, Coues, and others.

Inasmuch as the average bird spends one third of its time sleeping, I would suggest that a place be found for roosting, the datum following that on flight.

If I can be of any service, I will gladly contribute data on a few species of which I will make an especial study.

Yours truly,

FRANK L. BURNS.

OMAHA, NEB., March 29th, 1899.

DR. THEODORE GILL:

ESTEEMED SIR: After a perusal of your proposition as it appears in THE OSPREY for February, I desire to add my mite toward encouraging this grand scheme.

I believe that your proposition is just what the ornithologists of this country need and will appreciate.

The need of a new work of the kind you describe is evident to all who make a study of ornithology, either as amateurs or professionally, and your proposed method of publication in the form of appendixes to THE OSPREY will tend to place the work in the hands of many students of bird science, who would not, and in many cases could not, afford to have it, if published in the regular manner.

I am positive that you will find many hearty supporters in regard to your proposition to give the climatic races and "sub-species" a very subordinate rank, and in your manner of treating the extralimital species.

The suggestion regarding "uniform sequence of data" is very valuable and useful, and if your project is brought to a successful issue, should be adopted.

I am heartily in favor of your proposed "New History of North American Birds," and will be glad to aid you in any way that I can.

Yours very respectfully,

ISADOR S. TROSTLER.

SYRACUSE, N. Y., April 8th, 1899.

THE OSPREY COMPANY:

GENTLEMEN:—After reading Dr. Gill's letter on the proposed new work on North American birds, and also the editorial, I will say the sooner the work is begun the better.

Dr. Gill has surely thrown a bomb-shell into the ornithological camp which ought to have been done long ago, and I hope the force of the explosion will be sufficient to make every reader realize that something has got to be done to settle the matter of classification, which should be guided by morphological characters, and not by the fruitless efforts of a committee.

The co-operation of a large number of ornithologists under the leadership of Dr. Gill and Dr. Coates, and possibly one or two others who might be named, would make this work an unrivaled success.

The sequence of data is a point to be commended, especially in giving a thorough diagnosis of every species taken up.

The idea of publishing the work in connection with THE OSPREY is a good one, and it will add many new subscribers to your list.

I will be glad to offer myself to aid the work in every way that I can, and I hope to see its commencement in a near future number.

With best wishes,

Very respectfully yours,

A. W. PERRIOR.

788 BROADWAY, N. Y., April 30th, 1899.

DEAR DR. GILL: I have not had time until I tell you to read your exceedingly interesting proposal for a new history of North American birds in the February OSPREY. It is a magnificent scheme, and full of *common sense*—something greatly lacking in most ornithological work; and I should dearly love to do some of the biog-

raphical compilation if I could afford it. I hope you will put it through.

Cordially,

ERNEST INGERSOLL.

P. S. In your sequence of data wouldn't it be more natural and philosophical to put "age of pairing" alongside of the item "mating," instead of where it stands?

E. I.

TOULON, ILL., April 3d, 1899.

EDITOR OF THE OSPREY:

I wonder if Dr. Gill fully appreciates the magnitude of the work he proposes? I can speak from some slight experience of my own, for in 1892-'93, Mr. W. E. Loucks and myself undertook the task of ascertaining the distribution of birds in Illinois, together with some other data, on nearly the same plan as proposed by Dr. Gill, except that we did not intend to depart from the regular classification. Our reports were to be published in the "O. and O." I mail to you two numbers of this magazine, with one of our circulars enclosed. You will see by consulting the February number how little real information we received on most of the points required in our circular; and you can also imagine how much worthless material we had to sift out.

I lost faith in the "operaglass" people then, but found also that the "shot-gun wing" could do but little better, for while we could not depend on the former for identification, the latter could usually tell us nothing of interest about the nesting habits; the Audubonists were little better.

While Dr. Gill's work may not on the whole be practicable, yet if he can stir up the average collector, be he of birds or of eggs, or both, to answer a few questions on his list, he will have done a great work. How many members of the A. O. U. can tell how many days will elapse from the time any given bird begins to brood before the young birds appear? Or how long they remain in the nest? Or even the time required for depositing a full complement of eggs? The opera-glass will not do alone; neither will the gun be all that is required. We must draw on both if we would obtain the best results.

Truly yours,

A. C. MURCHISON.

ARE FIVE SETS ENOUGH?

LOS ANGELES, CAL., March 30th, 1899.

EDITOR OF THE OSPREY:

DEAR SIR: It was with a great deal of interest that I read the article of Rev. W. F. Henninger in your February number. I agree with you that Mr. Davis has written our best all-round egg-book, and it is deserving of all the praise and success his work has met with. Nevertheless, the small boy and the egg-hog have certainly caused a decrease in the number of our summer birds. It seems only a question of time when some of our birds will be a thing of the past. The Kingbird, for instance, which at one time was one of our commonest summer residents, is each year becoming scarce, not only in this vicinity, but all over Los Angeles County.

Almost as noticeable is the decrease in the number of *Calamospiza melanocorys*, Stejn. and *Heleodytes brunneicapillus*. Of our water birds

the *Fregata aquila*, which, up to two years ago was quite common during the breeding season on the islands off the coast of Southern California, is now rarely met with during nesting time, on any of these islands. I think that a series of five sets of eggs of most species should be sufficient for any oologist. I have taken more than five sets of several species, but some time ago decided to make five sets the limit for any one variety.

Yours truly,

H. J. LELAND.

A REPLY TO THE REV. W. F. HENNINGER.

PHILADELPHIA, PA., March 27, 1899.

EDITOR OF THE OSPREY:

I notice in the February number of your interesting Magazine an article under the caption of "The Scourge of Egg Collecting". The writer of this diatribe goes out of his way to attack Davie's Nest of Eggs of North American Birds, which is well known to all students of Oology as a valuable text book. The objection that our reverend friend has to this book is, that it contains descriptions of series of eggs of various species, furnished to Mr. Davie by Mr. Crandall, myself, and others, from our respective collections. Then the same great scientist goes on to remark that "science mourns over such men as Crandall, Norris, Davie and others."

Let me tell our learned friend of a most notable omission in his list. The lamented Major Bendire always collected large series of eggs, and the National Museum collection is on the same lines. Bendire said that it was impossible to show the great variety to which all eggs were subject, except by means of a series of specimens of each. But of course the reverend critic will, or would if Bendire were alive, say Bendire too is a "bird murderer"—he takes more than one egg of a kind.

It is impossible to describe eggs correctly unless one has a considerable number, as everybody who has seen a large collection of eggs must acknowledge. This is the reason why collectors keep series of eggs. To an ignorant writer, such as I am sorry to find our learned (?) friend, it may appear like bird murder to possess a number of sets of one species; but if the Rev. Henninger had only a little field experience he would know that removing a set of eggs from a pair of birds does not prevent the parents from promptly making another nest, and laying another set of eggs. This is always the case, except when the eggs are nearly hatched. No intelligent collector, however, disturbs the nest in this latter case.

Davie's book is accurate and valuable to the student simply because most of the descriptions of eggs are taken from a large number. If this had not been the case, the book would have been full of mistakes. I make this suggestion to my clerical critic; as he knows so much more than Mr. Davie, it is unfair to the great army of ornithologists and oologists throughout the country to keep such knowledge to himself.

Therefore, let him publish a work on similar lines to Davie's, but do not let him patronize any wicked collectors like Crandall or myself, and I am sure that his book, if it only displays half the learning and knowledge that his article will astonish the world. He can describe

all the species of eggs from one specimen apiece.

Joking apart, let me advise our reverend friend to keep on studying ornithology and oology for ten years, and then possibly he may be able to give a more intelligent criticism than he has done of Mr. Davie's work.

Mr. Henninger belongs to the great multitude that are crazy to get into print, and do not understand what fools they usually make of themselves when they do get there.

If he will look over Bendire's work on Oology, he will find that the author always refers to the number of eggs in the National Museum and takes his description, when possible, from a large series of each species. I have taken this space not entirely for the sake of answering the Rev. Henninger, as I consider his ignorance so dense that it would take an axe to cut through it; but also for fear of the effect his article might have upon young collectors who might think he knew what he was talking about, if they were not enlightened.

Very sincerely yours,

J. P. NORRIS, JR.

IN THE MATTER OF CRANKS.

PHILADELPHIA, PA., March 30, 1899.

EDITOR OF THE OSPREY:

I am delighted to hear that you intend to sit on cranks in THE OSPREY, as I think they have become rampant lately and deserve to be sat upon. Theoretically these Audubon Societies are all very well, but practically they don't amount to a row of pins, and are for the most part composed of fools who think they have a mission to perform, such as our reverend friend Henninger, and also the gentleman who wrote "An Ornithological Sermon" in the November number of THE OSPREY. The only practical good that the Audubon Societies have accomplished is to call the attention of some women to the destruction of heronries for the purpose of supplying them with aigrettes. I am sorry to say that only about 5 per cent of fashionable women have stopped wearing them, however, and as long as they continue to be fashionable the 95 per cent will keep on wearing them, even if the ladies know that Herons are being exterminated for the purpose of supplying them.

Very sincerely yours,

J. P. NORRIS, JR.

VOLCANIC ERUPTION.

SALEM, N. J., April 17, 1899.

EDITOR OF THE OSPREY:

I send you a letter for publication. I have been quiet, but a silent volcano will burst open in time.

There have been articles in THE OSPREY from time to time that have stirred by blood. I notice that in THE OSPREY for February there is an article written by Rev. W. G. Henninger, entitled "The Scourge of Egg Collecting." If the Rev. should get a few more unconverted souls at the altar and leave ornithology alone, we would come all right by reasoning, but not by such fault-finding abuse, as the Rev. has set before us. I believe the Rev. is angry because he could not write a book on ornithology himself. Furthermore, I don't believe he got his diploma if he did study ornithology ten years—not Nature's diploma, anyhow. Mr. Davie had to refer to

these collections of Crandall's, Norris's, etc. From my point of view one set of a kind is plenty to have in a collection, and four sets of a kind would be loads.

How about those Flicker Eggs, Rev? I will not uphold that collector; but come to look at it, is it any worse that taking the eggs from under a poor hen, and when she is ready to sit, put her in a coop and break her up—yes, a cruel thing! and her eggs are eaten every morning for breakfast. Now, who does that?

Now, dear reader, a word about scientific Latin names. I hardly feel free to express my opinion in this line, there are so many older ornithologists about; but here it goes. We are of English descent and use the English language in general; why not use it completely? For our A. O. U. List, use a nice English name, such as we already have, and abolish the Latin. Then the Gordian knot would be passed. I expect the old professionals would dislike to give up the Latin, but how about the young to take

it up? I believe that three-fourths of the ornithologists to-day would vote against Latin.

Yours most respectfully,

WM. B. CRISPIN.

TO BE READ WHILE OUR BACK IS TURNED.

ALAMEDA, CAL., March 30, 1899.

EDITOR OF THE OSPREY:

The "Osprey" is a perennial delight. I am particularly fired by the late numbers, in which common sense lurks in great chunks, while wisdom emanates in the lively and inimitable style of the chief editor. It is impossible to read the March number without a chuckle. Here is audacity tempered by consistency! The old bird has its claws sharpened, and every feather lies straight. May it rouse the slumbering and awake the dead! tho' a few useless eyes be scratched out. Success and more power to you and Pandion.

Yours very sincerely,

H. R. TAYLOR.

Pigeon Holes.

OREGON TOWHEE'S NEST.—This was photographed near Kapousin Lake, Washington, May 5, 1898. The birds are fairly common here, but this is the only nest I have seen. It was in a plain that had been cleared of trees, but the

as their complaining note resembles the cry of a cat, and also of the eastern Catbird. Their food consists of seeds, insects and caterpillars.

—C. W. BOWLES, Tacoma, Wash., April 9, 1899.



NEST AND EGGS OF OREGON TOWHEE.

stumps left in the ground, and the whole overgrown by blackberry vines, sal-lal brush and ferns. The place was very hot and dry all day, yet the birds seemed to do all of the incubating, as either the male or female was always on the nest when I went there; but the eggs would certainly have baked if they had not been turned regularly. The female would not sit long enough to be photographed, but would let me come within a foot of her if I left immediately. The male flushed whenever the nest was approached. Both birds always flew from the nest and did not try to get away through the brush. These birds are locally known as "Cat-birds,"

NEW NESTING LOCATION OF RIVOLI HUMMER (*EUGENES FULGENS*).—I notice that my friend F. C. Willard, in his interesting article on this species, in the January OSPREY, finds all his nests in maples, except one, which was in a sycamore. He also states that he found them all between 5,000 and 6,000 feet elevation. I believe he thus rightly indicates the rule; but, last season, about June 20th, in these same Huachuca Mountains, a companion took a Rivoli nest in a maple, at an elevation of about 7,500 feet; and three days later I discovered one of these birds building in a large fir not 100 feet below the summit of this range, which is, at that point, about 9,000 feet high, and at a long distance from any cañon stream. Nor was this all there was unusual in this case, for the nest, being composed of material collected in the vicinity, which has a very different vegetation from that of three or four thousand feet below (barring the spider's webs), was quite different. I can not describe it accurately as I have not had it in my possession. By a coincidence, that tiny nest, in that large fir, was found the day before by another collector, who had electrified me, on the previous night, by announcing that he had found the nest of the White-eared Hummer (*Basilinna leucotis*). As that would have been something new to science, I was intensely interested in that species, particularly as I had shot a female White-eared Hummer, in the same week that Dr. A. K. Fisher killed the first authentic specimen taken in the United States, and had supposed mine to be the first one taken until I learned from him of his find.

But the collector had reckoned without his host, and when it came to a show-down I had him, for I had interviewed the builders. This, it seems to me, shows a divergence somewhat unusual for birds to display in practically the same locality.—R. D. LUSK, Ft. Huachuca, Ariz., March 31, 1899.

NEST OF STELLER'S JAY.—This was taken June 5, 1898, near Kapousin Lake. These birds are very common here, but the nests are not often found. Fresh eggs may be found by the first week in April, and any time after that, till the first of June. The earlier sets all have four eggs, so that this one of three may be a second set. This nest was placed three feet from the base of a small fir growing out from a very steep bank, so that vertically it was about ten feet from the ground. The birds objected very much at first, but as the photographing progressed they became silent and apparently interested in the process. Their curiosity and impudence are unlimited, but



NEST AND EGGS OF STELLER'S JAY.

they seem so goodnatured that it is impossible to help laughing at them. I used to watch the Long-crested variety in Colorado eat the chickens' food while the cat would sit near by, licking his chops. Every once in a while he would try to crawl up to them, when all but one would fly into the trees, and any one would think from the actions of the remaining one that it was playing tag with the cat, and that it was not a question of life and death for the Jay; but they never were much less than ten feet apart. When they had gone far enough, the Jay would make a wide circuit and join the others at the food.

When they wish to leave a gulch that is two hundred feet deep, or more, instead of flying out or going up the sides (the slope is never far from forty-five degrees), they fly to the nearest tall tree and go from branch to branch upward until level with the top of the bank and then fly across.

I have shot only two for specimens and the stomachs contained only insects and gravel, which is probably their principal food; although in the autumn they are very fond of hazel nuts which they break open with their bill while holding the nut against a branch. I have no reason to think they destroy small birds' eggs, particularly as the small birds do not disturb them.—CHARLES W. BOWLES, Tacoma, Wash., April 9, 1899.

IS NEATNESS ALWAYS DESIRABLE? We have a 10 mile, high-tension (10,000 volt) electric line here that seems likely to exterminate the Loggerheads and Sparrow Hawks in its vicinity. Every time I inspect the line I find the remains of some bird, sometimes with the feet burnt off. One day I found four Loggerheads, one Mockingbird and one Sparrow Hawk. Knowing how quickly dead birds disappear, it would seem that many die this way. I was at a loss at first to know how they were killed; the wires are too far apart for them to make connection between them, and they can sit on one wire with perfect safety, as voltage no matter how high does no harm unless it has a completed circuit to force through the current which does the killing.

A Sparrow Hawk solved the problem for me. The iron brace of the cross-arm which supports the upper wires passes within a few inches of the lower wires. The Hawk got on these lower wires, and reached out to wipe his bill on the brace, thus completing the circuit to the ground. When I found him he was rigidly fixed in this position. All the birds I found were at the foot of posts; so I think they all must have been victims of this habit of neatness.—J. ROWLAND NOWELL, Anderson, S. C., March 22, 1899.

A NEW STATION FOR THE MEXICAN CROSSBILL.—On the 13th of March, Mr. Chase Littlejohn secured a single Mexican Crossbill (*L. c. stricklandi*), from a small flock which was feeding among the pines at the north head of Cerros. The specimen was a male in immature plumage. The Crossbills were wild, a characteristic shared by the other birds of this locality. I believe this is the first specimen of *Loxia* secured on Cerros Island. RICHARD C. MCGREGOR, Palo Alto, Cal., April, 1899.

THE DEATH OF JOSEPH WOLF at the age of 79 ends the career of a very notable zoological artist. It occurred on the 20th of April last. Mr. Wolf had the reputation among many good judges of being the best zoological artist of his (or any) age. He was born in Rhenish Prussia, in the small village of Möerz, district of Mayfeld, June, 1820.

He was established at Antwerp, when he was invited to illustrate G. R. Gray's "Genera of Birds." Afterwards he illustrated "The Birds of Northeast Africa," "The Birds of Japan," "The Birds of Great Britain" (by Gould), and numerous other works. His "Life and Habits of Wild Animals" was a familiar work between 20

and 30 years ago. An interesting biography by A. H. Palmer was published several years ago (1895). This was illustrated by numerous examples of his handiwork, among which are three of the Osprey. T. G.

THE DEATH OF PROF. O. C. MARSH removes from the world one whose celebrity as an ornithologist rested mainly on the discovery a

quarter of a century ago of the toothed bird named *Hesperornis*, and the still more remarkable bird with biconcave vertebrae named *Ichthyornis*. He published on these and related forms, in 1880, a sumptuously illustrated monograph entitled "The Extinct Toothed Birds of North America." Prof. Marsh died at New Haven, on the 18th of March, in his 68th year.—T. G.

In The Osprey's Claws.

BIRD GODS. By Charles de Kay. With an Accompaniment of Decorations by George Wharton Edwards. New York: A. G. Barnes & Co., 1898, pp. xxiv, 249.

We may imagine why this book was written and decorated, but can discover no valid reason for its publication. We doubt not the author's good intentions, but are reminded of the saying that a certain alleged locality is paved with those qualities. He tells us plainly what he intends to do, yet we find his work singularly futile. It is a sad case of misapplied ingenuity, failing of its purpose through its author's inability to handle his chosen subject in any proper manner. Bird Gods is not a vicious book, because it is sincere; but it amounts to just nothing, aside from its errors of fact. We could refer the author to various sound treatises on zoolatry, in which he would find the information required on his part. Ovid's *Metamorphoses*, for example, would be a good one for him to begin with.

Mr. de Kay states in his preface, p. x, "I wish to call attention to remains in the early lore of Europe of a very extensive connection of birds with gods, pointing to a worship of the bird itself as the living representative of a god, or else to such a position of a bird toward a deity as to fairly permit the inference that at a period still more remote the bird itself was worshipped." And again, p. xi, "I follow in mythology and epic poetry and legends the traces of certain birds (naming them), and try to show how their peculiarities and habits, observed by primitive man with the keenness of savages, have laid the foundation for certain elements in various religions and mythologies," etc. These propositions are well enough; but how satisfactorily the purpose thus avowed is accomplished may be judged from some statements made in the opening chapter.

This is entitled "There was the Douvé with her Eyen Meeke," and professes to treat of the dove in connection with Venus, or in other of that bird's mythological bearings. Among other things we are informed that "it is at Dodona that the dove appears in human form and thus gives us one clew to its connection with Venus" (p. 10). In further explication of his theme Mr. de Kay invokes the aid of etymology, so-called. "The connection of the dove with Venus may be found in Greek, where a name for the dove is oinás . . . a word having nothing to do with wine (oinos)," p. 14. Again, p. 15, "This dove name oinás is found not only in Venus, but in

the favorite son of Venus, Aeneas of Troy. . . . Aeneas is therefore the dove god." On p. 16, we are told that "the other Greek word for pigeon or dove, pelia, seems to be of Greek not of Pelasgic origin, like oinás. We find a probable meaning in the word pelenizo. . . . This is a better derivation than from pelós . . . and so the old King Pelops, whose name adheres to the Peloponnesus, is likelier to mean 'Dove face' than 'Dark face.'" The required corrective of such amazing erudition as is here displayed would be the nearest copy of Liddell and Scott. After such a taste of the quality of this book, it will be needless to say more, than that the decorations are appropriate to the text. In short, Bird Gods is a book to be avoided, unless you wish to be bored and misinformed.—E. C.

THE WILSON BULLETIN, No. 25, Mar. 30, 1899, pp. 17-32. Edited by Lynds Jones. Bi-monthly.

This unpretentious and commendable magazine appears regularly, at a price which places it within reach of every one. Mr. Jones conducts it in good tone and temper, keeps it thoroughly ornithological, and runs no fad or clique. There is more good bird matter in it than we find in some periodicals of greater prominence, and it well deserves success. May it go on and prosper. E. C.

BOLLETTINO DEI MUSEI DI ZOOLOGIA ED ANATOMIA COMPARATA DELLA R. UNIVERSITÀ DI TORINO, Vol. xiv, No. 339, March 12, 1899.

This number of the well-known Bulletin contains an account, by our friend Count T. Salvadori and Dr. E. Festa, of the birds of the latter's journey to Darien and vicinity. The collection consists of 202 specimens of 122 species, one of which was lately described as new by Salvadori (*Rhamphocelus festa*); and the list is briefly annotated throughout.—E. C.

AS AVES DO ESTADO DE SAN PAULO. Por. H. von Ihering. Revista do Museu Paulista, iii, 1898, pp. 113-476.

The greater part of this volume of the Revista is occupied by Dr. von Ihering with an extended memoir on the birds of the state—we make no doubt the most important single contribution ever made to our knowledge of this particular subject, for a copy of which THE OSPREY is indebted to the author, who desires the Magazine in exchange for the Revista, now in its third volume, which he edits. The paper is based on the collections of the Museum, and other sources of information. It is a synonymic list of 590 species known to occur in the state, quite ex-

tensively annotated with regard to geographical and other data. The nomenclature disregards the A. O. U. Code, and rather leans upon the authority of the great British Museum Catalogue.—E. C.

REVERIES AND RECOLLECTIONS OF A NATURALIST. By Oliver Davie. Columbus, Ohio: Oliver Davie and Co., 1898. Edition de Luxe, \$2.00.

Mr. Davie is a naturalist, particularly an ornithologist and taxidermist. He has, no doubt, many friends among bird students who, in their earlier days, before they began to use "Cones' Key" or "Ridgway's Manual," had owned a copy of his "Nests and Eggs of North American birds." To them this book will appeal most. The "Reveries"—the unconventional paragraphing and chapter arrangement will bear out the title—are not wholly restricted to those of a naturalist; in fact, a good share of the pages is devoted to literary criticism.

Mr. Davie's style and sentiment are also very poetic, as the reader will find out in chapter one—the "Introduction." Beginning with chapter two, in 1875, we are told that Mr. Davie began a collection of birds. And then an incident of the shooting of a "winged water-lily," or, rather, a Common Tern, is told in a way characteristic of Mr. Davie. To finish off with the Tern, an excellent paragraph on Terns is borrowed from Mr. William Brewster. From here on through the bulk of the chapter the reveries are of poets and prose writers. In the first lines of chapter three the taxidermist asserts himself. He "had longed to be a Hornaday," but "somehow" he "always had too many irons in the fire." The chapter leads on to a story of a struggle of a Robin and a young snake, and another of a battle in which a Hawk and a weasel were the principals. Something about Owls is next in order, from which we follow on by the way of various reveries upon economic ornithology and other subjects to some notes on Audubon and the artist Bambrrough, who lived in Columbus and once traveled with Audubon. In the last chapter, of ten pages, a number of species of birds are put before us as Mr. Davie sees them.

The volume is an example of fine book-making. Between prettily adorned silk-cloth covers there is some neat letterpress on a high-grade, deckle-edge paper. The frontispiece is a photograph showing the author in his study. Most of the twelve full-page plates which are given do not directly bear upon the text; they show some examples of Mr. Davie's taxidermist work, several drawings by Mr. E. D. Cheney, and portraits of Audubon and Bambrrough, explanatory notes of each being given on fly-leaves. The work is published in an *édition de luxe* of 200 numbered copies. W. A. J.

THE AUK, April, 1899, pp. 135-216, ix-xxix.

A beautiful colored plate by Fuertes of *Leucocurva phalerata* makes a striking frontispiece to Mr. Bang's article on the Hummingbirds of Columbia. Mr. O. G. Libby writes on the nocturnal flight of migrating birds. John Murdoch's historical notice of Ross' Rosy Gull is remarkably complete—a good monograph on a notable subject, by one who knows about it. Mr. Barlow has the nesting of the Hermit Warbler at full length. The very interesting *ana* which

formed the subject of Mr. Witmer Stone's address before the A. O. U. last November are now published under the title of some "Philadelphia ornithological collections and collectors, 1784-1850" charming gossip, by no means devoid of historical and biographical weight, and well worthy of permanent record. We read some of the general notes with grim pleasure—they would delight a cynic who should feel sceptical of the omniscience of the A. O. U. Committee on Nomenclature. If Mr. Harry C. Oberholzer felt grieved at the way some of his new birds were lately squelched by the committee or squeezed in the Osprey's claws, he has his innings now; both he and Dr. C. W. Richmond show that a large number of names still sanctioned by the committee must be changed by the canons of the code. After operating since 1883, with two editions of the Check-list and nine Supplements, we seem to have been brought to such a lame and impotent conclusion, and to have so far receded from instead of approaching stability of nomenclature, that perhaps the old committee had better be discharged, and a new one appointed, to consist entirely of younger men who have shown aptitude for bibliographical and synonymic research. Mr. Oberholzer and Dr. Richmond would make good members, and no doubt three others could be found. Meanwhile, having foundered at sea among Latin names, we may be well content to take any we can find having any show of authority or semblance of propriety—or better still we may use English names, which are much more definite and more generally understood, than those of the A. U. I. Code. We are more than ever convinced that stability in scientific nomenclature is an iridescent dream; but possibly the coming generation of nomenclators like Richmond and Oberholzer may make it a reality, if Allen, Brewster, Cones, Merriam and Ridgway will retire from the field whereon they have been worsted. Mr. Brewster has on p. 209 a genial and humorous skit on the spelling of names, in which he pokes fun at Mr. D. G. Elliot and Dr. Elliott Cones for the difference in spelling one part of their respective names, also adducing President Eliot of Harvard as a third subspecies of the same word. One of the most striking articles in this number of the *Auk* is Mr. Wayne's account of the enormous and almost incredible destruction of birds of South Carolina by the first cold wave of February, 1899. "To say Fox Sparrows and Snowbirds were frozen to death by the millions is not an exaggerated statement, but a conservative one;" tens of thousands of Woodcock shared the same fate, and countless more of various species were destroyed by this one act of God. That is a greater destruction of bird life than ornithology has inflicted upon the bird world since the science began. It makes us think that the Almighty never read an Audubon circular, perhaps never heard of an Audubon society or even knew of Bird-Lore. We find no fault with Him ourselves, because we know the existence of evil is necessary; but we suggest that the clergy, who are on more intimate terms with Him than we pretend to be, should petition Him not to do so any more, and reason with Him, and argue with Him, and try to convince Him that such apparently wanton and capricious destruction

of bird life hurts their feelings, besides being dead against all the Audubon circulars. We doubt that such an appeal to the throne of grace would have the slightest effect on meteorology; but it might keep some of the Audubonians out of mischief, stop their abuse of ornithologists during the prayer meetings at any rate, and furnish the editor of Bird-Lore with good material for his magazine. E. C.

ON CERTAIN GENERIC AND SUBGENERIC NAMES IN THE A. O. U. CHECK-LIST. It is well-known that the discrimination of genera in our Check-List has not kept pace with our ingenuity in the segregation of species and subspecies. This is inconsistent with the progress of the science in a certain direction, and therefore not as it should be. A few years ago the committee which regulates our nomenclature to some extent became panic-stricken on the subject of genera, and in that frame of mind abolished a large number of generic names which had been current since 1858, or degraded them to subgeneric rank. This was distinctly a retrograde step, not an advance in the art of classification; and we have ever since been trying to recover ground lost during our stampede. We have succeeded well in some families, as *Trochilidae* and *Anatidae*; but not so well in others. In my judgment, a large number of the subgenera now standing in the Check-List require to be restored or advanced to full generic rank, and some additional subgenera need to be recognized. I submit the following cases to the judgment of the committee:

Subgenus *Proctopus*: for the Eared Grebes.

Subgenus or genus *Micruria*: for Xantus' and Craveri's Murrelets.

Subgenus or genus *Pseuduria*, Sharpe, MS. for the Black Guillemots with 14 rectrices.

Subgenus or genus *Chroicocephalus*: for the Hooded Gulls.

Subgenus *Hydrocolus*: for *Larus minutus*.

Genus *Creagrus*: for the large Fork-tailed Gull of the Hypothetical List.

Subgenus *Phaethria*: for the Short-tailed and Black-footed Albatrosses.

Subgenus *Cymochorea*: for Leach's petrel, etc.

Subgenus *Pallasicorax* nob. Type *Phalacrocorax perspicillatus*.

A subgenus for the Wood Duck, as the type of *A. exilis galeiculata*.

Genus *Fuligula*: for the Scaups.

Reduction of *Charitonetta* to rank of subgenus.

Genus *Ardea*: type *A. cinerea* Linn. To be restricted as follows:

Genus *Herodias*: type *A. egretta* Gm.

Genus *Garzetta*: type *A. garzetta* Linn., with possibly a subgenus *Leucophoyx* for our Snowy Heron.

Genus *Dichromanassa*: type *A. rufa*. Bodd. (*Dichromanassa rufescens*).

Genus *Hydranassa*: type *A. ludoviciana* Wils.

Genus *Florida*: type *A. caerula* Linn.

Genus *Butorides*: type *A. javanicus* Horsf.

Subgenus *Limnogeranus*: for the Whooping Crane.

Genus *Arquatella*: for the Purple Sandpipers.

Genus *Actodromas*: for the Stints, etc.

Genus *Pelidna*: for the Dunlins.

Genus *Ancylochilus*: for the Curlew Sandpiper.

Subgenus *Totanus*: to include the Yellowlegs.

Genus *Podasocys*: for the Mountain Plover.

Genus *Astur*: for the Goshawks.

Subgenus *Psiloscops* nob. Type *Scops flammeola* Kaup. (*Ps. flammeola* and *Ps. f. idahoensis*.)

Genus *Asyndesmus*: for Lewis' Woodpecker.

Genus *Centurus*: for the Red-bellied Woodpecker, etc.

Genus *Picicorvus*: for Clark's Crow.

Genus *Hesperiphona*: for the Evening Grosbeak.

Genus *Passerculus*: for the Savanna Sparrow.

Subgenus *Iridoprocne*: for the Tree Swallow.

Genus *Telmatodytes*: for the Long-billed Marsh Wren.

Genus *Lophophanes*: for the Tufted Titmice.

ELLIOTT COUES.

Washington, D. C., April 21, 1899.

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ON THE COMPARATIVE AGES TO WHICH BIRDS LIVE.*

By J. H. GURNEY, F.Z.S.

How many things there are in ornithology, in spite of our boasting proficiency at the present day, of which we are really profoundly ignorant! And one of these is the age of birds. Who can say what guides birds on migration, in spite of all which has been written on the subject whether any of them have the power of smelling—what their powers of vision are, or even what becomes of them when they are dead?

There is still much difference of opinion as to whether many species moult the major part of their plumage or recolour, and the best ornithologists are divided as to the height at which birds migrate, the speed at which they go, and the age to which they can, under the most favourable conditions, live, which is the subject of the present paper. No one, up to now, has been at the pains to collect and compare the facts about age scattered in many books, but I hope to make at least a step in that direction. Birds are not to be compared to human beings. They are in truth handicapped in the race for life, for it is ordained that all the feathered tribes should be very much exposed to death from a great many accidental causes. We may so call death from insufficiency of food (oftenest arising from the extremes of heat and frost), from ravenous Hawks and other predaceous animals, and from the hand of man with his gun and snare. Almost every species of bird migrates, and they have to reckon on storms during migration, which doubtless dash them into the sea in hundreds every year.

Because of these perils, it may well be believed that not one bird in fifty reaches its full possible duration of life, perhaps not one in two hundred. However, the subject for discussion in this article is not the average to which birds commonly live, but rather the full extent of age to which they can live, all things being in their favour; but both divisions of the subject are interesting, and I am surprised that no recent writer has inquired into them.

The Great Lord Bacon, in his treatise on 'Length and Shortness of Life in Living Creatures,' has a great deal to say about the age of birds, and concluded that more kinds were found to be long-lived than of beasts, setting forth various reasons why this was probably so. He particularly lays emphasis on the mixed motion of birds in their flying, as being a kind of exer-

cise conducive to longevity, which is denied to beasts, and he assigns to several sorts what was believed to be the maximum of their longevity in his day.

Willughby and Ray (1676), the pioneers of British Ornithology, devote a chapter to "The Age of Birds," which shows that attention had been turned to the subject by older authors than themselves, like Aldrovandus. Something also may be found in Philos. of N. H. ii. p. 41b, and in 'Domestic Habits of Birds,' 1833, from the pen, I believe, of Prof. J. Rennie; but the literature of the subject in modern times is very scanty, though a certain number of incidental notices are scattered about such journals as 'The Field' newspaper and 'The Zoologist.'

In Thompson's 'Birds of Ireland' (1851) there is a useful article, and in 'The Naturalist' for 1897, p. 129, there is a paper by Mr. Oxley Graham on "Owls and their Longevity." Allusion should also be made to Mr. W. B. Tegetmeier's article on "Length of Life in Zoological Collections" ('The Field,' June 5th, 1869).

Again, in Knapp's 'Journal of a Naturalist,' the duration of animal life is discussed at p. 180. Remarking on the longevity of the Eagle, Raven, and Parrot in a captive condition, the author opines that "in a really wild state they would expire before the period which they attain when under our attention and care;" and again he says "it is probable that few animals in a perfectly wild state live to a natural extinction of life."

It is easier to subscribe to the second opinion here expressed than to the first. Cage-birds are too often neglected to have an easy time of it, but perhaps a semi-domesticated bird like *Cygnus olor* has the best chance of longevity of any.

It is more than probable that some families, and it may be even allied genera, attain a greater age than others, and to elicit information on this head has been the chief object of inquiry. The tenacity of life in *Sarcophamphus gryphus* and *Cyps fulvus* is great, and all Eagles and carrion-eating birds are reputed to exist a long time without food; a neglected *Aquila chrysaetos*, for example, live 21 days, and most Birds of prey are capable of subsisting for months without water.

Some of the sea-birds can fast a very long time, such as *Puffinus anglorum*. A *Somateria*

* Communicated by the Author and reprinted with some revisions from THE IBIS (London) for January, 1899.

mollissima of Mr. St. Quentin's had no food for 28 days, and a *Diomedea nigripes* of Mr. Robert Swinhoe's none for 35. The young of *Diomedea* has been thought to live on its own fat, and it is said that *Aptenodytes demersa* can live two months without a morsel of food (Ibis, 1866, p. 324). These facts are suggestive, for surely all such famine-proof birds must in the race for life have an advantage over the weaker *Passeres* and *Picariæ*. Grass-Finches, Manikins, Waxbills, Cut-throats, &c., whatever may be the case in Africa, can last a very short time without seed in confinement here in England. The *Columbæ* and the *Tetraonidæ* and *Phasianidæ* also contain genera which seem to want food often, even in a wild state.

The following is a selection of genera for comparison, indicative of their normal length of life, from the list of ages to be presently given:—

	Years
Cockatoo (<i>Cacalua</i>).....	81
Goose (<i>Anser</i>).....	80
Swan (<i>Cygnus</i>).....	70
Raven (<i>Corvus</i>).....	69
Owl (<i>Bubo</i>).....	68
Macaw (<i>Ara</i>).....	64
Heron (<i>Ardea</i>).....	60
Bateleur Eagle (<i>Heliolanius</i>)....	55
Vasa Parrot (<i>Coracopsis</i>).....	54
Condor (<i>Sarcorhamphus</i>).....	52
Albatross (<i>Diomedea</i>).....	46
Gull (<i>Larus</i>).....	44
Pelican (<i>Pelecanus</i>).....	41
Dove (<i>Turtur</i>).....	40
Oyster-catcher (<i>Haematopus</i>)....	30
Emu (<i>Dromæus</i>).....	28

Dr. Brehm thought that the smaller birds had a shorter life than the larger ones, and some other naturalists have taken up the same idea, which is not improbable; but it is a theory which is mere supposition, and one which is almost incapable of proof, and I only mention it as having Brehm's authority. I may here quote some remarks from a correspondent who has felt the same interest in this difficult matter that I have. "One of the puzzles," writes Mr. R. M. Barrington *in litt.*, "of the ornithological census is the uniformity with which birds maintain their numbers. The Guillemot (*Uria troile*) with one egg does not diminish, and the Wren (*Troglodytes parvulus*) and Teal (*Querquedula crecca*) do not seem to increase, although laying many more eggs. The mortality seems in direct ratio to the birthrate It would seem that, broadly speaking, a bird which lays one egg must live longer than a bird which lays ten, if they both breed once annually."

Whether "age" is or is not the solution of this puzzle is a difficult question to answer,—there is no species of Duck in my list older than 29, and as to Wrens and Guillemots we know nothing. The Guillemot has probably few enemies, and the Wren and Long-tailed Titmouse cannot have

much to contend with. It looks as if Mr. Barrington's suggestion was right, yet it must be remembered that there are several sorts of birds that lay a good many eggs, such as the *Anseres* and *Cygni*, which are known to be long-lived.

Weismann and Oken have argued that in St. Kilda [Boreray] so many young Gannets (*Sula bassana*) are annually taken for food that, if this were not a long-lived species, diminution in the stock would be observable; and the same applies to the Fulmar (*Fulmarus glacialis*). This is in some respects rather a false style of reasoning, because if there were not an annual slaughter there would probably be an annual throwing off of the surplus; but the argument must not be passed over. If it were admitted, it would apply in a less degree to *Perdix cinerea* and *Lagopus scoticus*, which are shot by tens of thousands, and also to several other birds.

Search as we will, we hardly ever find a bird which has unmistakably died a natural death, and this has been put forward by some authors as a great argument for longevity. For the same reason great age has been assigned to the elephant, and such elephant-hunters as Sir Samuel Baker and Col. Pollock declare that they have never come across the carcass of an elephant. Allowing for the quick consumption of the soft parts by predaceous quadrupeds and burying beetles, one would at least expect to find the larger birds' skeletons occasionally, but such is very seldom the case.

The period of a bird's incubation seems to have something to do with the length of its life, albeit the *Psittaci* are the principal exceptions which invalidate this theory. Referring to Mr. William Evan's "Table of Periods of Incubation" (Ibis, 1891, p. 57, 1892, p. 55), it will be seen that Cockatoos take 21 days, Cockateels 20, Parakeets 18, and Macaws from 20 to 25, to hatch. Three weeks is very little for such a long-lived family as this is commonly supposed to be, compared with the incubation of many birds which, according to our present knowledge, do not live so long as the *Psittaci*; but the subject cannot be worked out without more facts which we have not got at present. Among long-lived birds which take a long time in incubation, the principal are:—

<i>Bubo maximus</i> , about 35 days (Gurney).
<i>Aquila</i> , 30-35 days (Evans).
<i>Sarcorhamphus</i> , 54 days (Broderip).
<i>Anser domesticus</i> , 30 days (Evans).
<i>Cygnus olor</i> , 36 days (Stevenson).

So far as they go these support the theory, but unfortunately there are also many exceptions to invalidate it. To take only one: a domesticated Wild Duck requires 28 days to hatch her eggs, and the domesticated Muscovy Duck 30 days; but one lives as long as the other so far as we know, though poultry-keepers do not commonly give any Ducks the chance of very great longevity*.

*It is generally held by those best qualified to judge (though not by Prof. Newton) that there is also some correspondence between age and gestation in mammals, at any rate in the larger Mammalia. The subject has lately been revived and ventilated in 'The Field' newspaper theories put forward by Col. Pollock and Mr. Cameron. (See February 5th and 12th, 1898), and some facts and some theory and Ray remark: "If Animals of different kinds be compared together, as for example Birds with Beasts, those will sometimes be found to be most vivacious [long-lived] which are borne the least while in the womb" (Ornith., book i. ch. iv). Is incubation in Birds equivalent to gestation in Beasts?

It is abundantly proved that so long as health remains to them the majority of birds can go on breeding, as Mr. Meade-Waldo's Eagle-Owls, (*Bubo maximus*) to be mentioned presently, testify. It is so with the domestic Goose of our farmyards. Mr. L. Wright, an authority in such matters, says:—"The Goose lives, lays, and produces strong and healthy progeny to a very advanced age, many cases being recorded of birds being in full breeding to at least forty years old." ('The Book of Poultry,' p. 560). What is true of *Anser domesticus* and *Bubo maximus* is also true of many other birds. Their vocal powers are likewise known to remain strong and vigorous for a very long period: a Blackbird of 20 continued to sing well ('The Belfast Commercial Chronicle,' Dec. 25th, 1839) and a Skylark nearly as long ('Zoologist,' 1865, p. 9604), while a *Gymnorhina tibicen* of 20 was noisy to the last. If birds can sing as long as that in a cage, there is probably no limit in a wild state. Johann Naumann instances a Cuckoo which called, season after season, in the same peculiar key for 25 years, and was considered to be the same bird, and other cases in point might be cited.

Bleached or faded birds, and birds with worn or abraded plumage, are often held on that account to be very old, but the truth is the colouring of a bird in perfect health and the texture of its feathers are exactly the same at 50 as at five,—vide Mr. Meade-Waldo's veteran pair of *Bubo maximus*. Neither are overgrown beaks and misshaped claws a sign of age, arising in all cases from unnatural conditions of some kind. An *Alanda arvensis* of 20 with a hind claw exceeding 2½ inches did not owe that deformity, as its owner erroneously supposed, to its age, but to captivity and unnatural perches.

Sometimes birds, after being many years in captivity, have been known to develop white feathers, e. g. *Turdus merula* (Thompson), *Monticola cyaneus* (Macpherson), *Fringilla cælebs* (Butler). But this incipient albinism is not directly due to age, but to the artificial conditions under which all birds are placed in captivity. In the same way, when the colour of the iris grows pale, as in both nocturnal and diurnal birds of prey, it is much more likely to be from sun-exposure than from age, though it is possibly longevity which sometimes produces blindness from cataract in *Bubo maximus* and some *Psittaci*.

Now I should like to say a word about marking birds, which some experimenters have thought could be made an available method if placed in careful hands, and it certainly seems that it might be so. Nevertheless, artificial marking to test age is a procedure beset with difficulties, for the chances must ever be 50 to 1 against a ringed wild bird turning up in the right quarter to be identified after a lapse of years. The easiest species to experiment with would probably be *Cygnus olor*, living as it does in a semi-domesticated state, and *C. olor* has had, ever since the swanherds of the time of Bacon, the reputation of antiquity. *Ardea cinerea* has on various occasions been ringed by the Loo Hawing Club and other falconers, as will appear further on, and there is one very curious anecdote of a Dutch Swan which bore its ring 102 years.

The lightest aluminium rings are recommended by some pigeon-fanciers, as they do not rust, to be fixed close round the leg (tarsus), but they are not so pliable as white metal rings, which can be made of all sizes, open easily, and are said not to corrode. Either sort can be obtained from Mr. A. C. Hughes, Fulwell Station, Twickenham, the inventor of interlocking pigeon-rings, such as are shown in the accompanying figures. If used for young birds, the day of putting them on should be deferred as long as possible, for in most cases the tarsus continues to grow until the bird is full-grown, and cruelty may arise from too tight a ligature.



Interlocking rings for marking birds.

Since 1891 about nine young Woodcocks have been annually ringed at Alnwick Castle in Northumberland, as I learn from Mr. E. G. Wheeler, agent to the estate, who adds that the practice of ringing them will be continued by the Duke's orders. If they are not all shot, we may anticipate that naturalists will get some statistics from some of these "Longbills", but some have been killed already in the Alnwick preserves, besides one in Kent, one in Wexford, and one in Cork. There is at present no case of a Woodcock living more than 6½ years.

In 1896 nineteen *Uria bruennichi* and twenty-two *Rissa tridactyla*, were liberated in Franz Josef Land marked with a "J" (Ibis, 1898, pp. 268, 271). In 1898 Col. Feilden and I supplied the gamekeepers at Holkham in Norfolk with rings stamped "Holkam 1898"; and Miss Hamond ringed 44 young *Sterna fluviatilis* at the same place with rings inscribed "1898", and one of them has turned up already. In 1887 a marked Albatross was released off Cape Horn, and some years ago Mr. Evans of Edinburgh marked some Swallows.

In the case of the *Alcids* daubs of paint have been tried, but artificial marks are of no value as an indication of age, for the feathers of birds are continually dropping out and wearing away. For this reason accidental varieties, e. g. the pied Ravens of Faeroe, cannot be trusted for many years. A white-headed *Turdus merula* seen at Fethard for 15 years ('Birds of Ireland,' i. p. 148) and another, seen at Barnard Castle for 7 (Zool. 1866, p. 347), may or may not have been the identical individuals which first revealed themselves, as their recorders believed them to be.

The following, by Mr. Joseph Whitaker, who has the largest collection of pied birds in England, is very much to the point, and may be adduced as bearing on this fallacy:—"When once a variety has occurred there is always the chance of its coming out again. For instance, in a rookery in Leicestershire a few years back a white Rook (*Corvus frugilegus*) was hatched, and nearly every year since either white or pied ones have occurred". (Norwich N. Tr. iv. p. 63). These latter were, presumably, the descendants of the albino or of the albino's parents and it is evident that the first white Rook detected may very soon have been dead.

Still less is the fact that a *Gypaetus barbatus* in Switzerland or a *Corvus corax* frequented one secure precipice for a quarter of a century, without any others of the same species being seen, a proof that it was always the same individual. Neither can we admit as more than presumptive evidence the return year after year of such a bird as the *Muscicapa grisola* to the same nesting-place. To show how unsafe this conclusion would be, Hawfinches (*Coccothraustes vulgaris*) nested almost every year on a certain bough on an apple-tree in Norfolk, though both the old birds were frequently shot (F. Norgate, Norw. Nat. Tr. ii. p. 201), and therefore they could not have been the same.

In the same category is the evidence of the keeper of the Bass Rock who "recognized from particular and well known marks certain" Gannets for upwards of forty years. (Selby, Brit. Orn. ii. p. 457).

There are eight Orders of Birds about which for various reasons I should like to say something before beginning my List.

PASSERES.

In the order *Passeres*, with which the list commences, 24 years seems to be about the maximum in confinement, and only five in the list reach that, but six others get as far as 20. Several have lived long enough to refute Brehm's opinion that the smaller singing-birds can scarcely live more than ten years. Mr. Meade-Waldo's pair of *Erythropsiza githagina* even produced and reared 22 young ones in one season when they were twelve years old, an instance of what skill and care can do with cage-birds in a country far colder than their own. As to how long the *Passeres* can live in a wild state we are quite in the dark, and must remain so apparently, none of those in my list being wild ones.

Dr. A. G. Butler has succeeded in keeping the following Weaver-birds for nine years:—*Foudia madagascariensis*, *Nesacanthus eminentissima*, *Quelea russi*, *Q. quelea*, *Pyromelana franciscana*, and *P. afra*, and they were all two or three years old when we first had them. Many other small cage-birds, such as *Liothrix lukus* and *Sialia sialis*, have also been kept for about the same period by Dr. Butler and other bird-fanciers. The Raven's attribute of long life dates to early times and have given rise to some amusing stories. On the Faeroe Islands is an old saying:—"A human being lives as long as three horses, a Crow as long as three human beings, but a Raven as long as seven Crows". Willughby says their reported age exceeds all belief, "yet", he adds, "doth it evince that these birds are very long-lived"—having, it may be, in his mind the Greek poet Hesiod, who averred that a Raven would live nine times as long as a man. But neither Francis Willughby nor Bacon nor Kjarbølling, who says "Ravens in confinement have lived over 100 years", gives verified cases. Montbeillard is one who says it seems well ascertained that Ravens sometimes live a century or more, adding that in many cities of France they have been known to attain to that age: probably an assumption from the circumstance of a pair of them, presumably the same individuals, continuing to

haunt one rock or one eyrie for an indefinite number of years, which is absolutely no proof.

PSITTACI.

Le Vaillant's oft-quoted anecdote of a Grey Parrot, *Psittacus erithacus*, which began to lose its memory at 60, to moult irregularly at 65, and to become blind at 90, and died at 93 (Hist. Nat. des Perroquets) is probably true. These familiar pets have repeatedly lived to be five-and-twenty and sometimes thirty, though the stock now commonly imported are so unhealthy that they die in two years. James Jennings refers to one of seventy-seven; he does not say it was *Psittacus erithacus* ('Ornithologia,' p. 396), but probably such was the case.

In 'The Field' of April 10th and 24th, 1869, Mr. J. Jones and "W. H. M.", wrote of a Cockatoo of 70, and still alive, which announcement immediately evoked a Scotch Parrot of 72 (*l. c.* May 8th), but in neither case is the name of the species given probably *Cacatua galerita* and *Psittacus erithacus* are intended.

The *Cacatuidæ* are indubitably long-lived, especially the familiar Sulphur-crested Cockatoo, which, chained to its stand year after year, never seems to get older, and I have two other credible records of this bird at 81 and 50. But if the members of a certain family at Leckhampton, in Gloucestershire, are to be trusted, a Cockatoo once lived 120 years ('Land and Water', 1870.) The old sexton of Leckhampton, whose veracity was supposed to be unimpeachable, told Mr. E. L. Layard he had himself known it "nigh 80 year," and Mr. Layard was not the man to accept such a story without enquiry.

Mr. Abrahams, the well-known dealer, communicated to Dr. A. G. Butler particulars of a Surinam Amazon credibly believed by him to be 102 years old. An Amazon Parrot well known to Dr. W. T. Greene was more than half this age. The Black Vasa (*Coracopsis*) of Madagascar has in three or four instances lived to a good old maturity, one in the Zoological Gardens, vouched for by Mr. Selater, having been there 54 years. In spite of all these instances there is no real proof that the *Psittaci* live longer than other birds; the only thing they really do prove is that Parrots are easier to keep in confinement. See, for a curious Parrot story, Humboldt's 'Ansichten der Natur,' i. p. 285. This bird remained the sole possessor of a literally dead language, formerly spoken by the Aturians, an Indian tribe in South America.

STRIGES.

Certainly Eagle-Owls (*Bubo maximus*) attain a very great age, as is befitting birds of such a wise and patriarchal countenance! Their longevity has been abundantly demonstrated by many kept by my late father, Lord Lilford, and Mr. Fountaine, but above all by Mr. Meade-Waldo's marvellous old pair, now 68 and 53 years old. What is very remarkable and an extraordinary proof of vigour is that Mr. Meade-Waldo's Owls have bred regularly since 1864, namely 32 years, having in that time reared no less than 93 young ones. They are still in the best of health, showing what care and personal attention can do. But old as Mr. Meade-Waldo's Owls are,

Sussex can take the prize, according to the 'West Sussex Gazette', with one of the hoary denizens of the keep of Arundel Castle, called "Lord Thurlow". This was the name of an Eagle-Owl, the subject of some amusing stories, which expired in 1859 at the age of 100, leaving seven birds in captivity in the "keep", one of which was 63. From inquiries made at the Castle I believe them to have been the European Eagle-Owl, *Bubo maximus*, but on this head see Borrer's 'Birds of Sussex', p. xvii. With what degree of precision their ages were recorded it is difficult to say; but the present Duke confirmed the undoubted fact of their being very old, and concerning Mr. Meade-Waldo's pair there need be no question.

ACCIPITRES.

Besides the 27 cases to be presently enumerated, several of which it will be seen from the list are sufficiently remarkable, there are stories with much credibility about them of still older Accipitres, and to these I would briefly direct attention. To begin with, Brehm, in his 'Life of Animals' (1878), gives us an *Aquila chrysaetus* nearly 80, which had died in captivity at Schoenbrunn. At this place also a white-headed Vulture (*Gyps fulvus*?) died in 1824, at the reputed age of 118 (Knauer, *Der Naturhistoriker*).

According to Maitland's 'History of London' (1756), there was in 1754, in the Tower of London menagerie, "a Golden Eagle which has been kept there upwards of ninety years, and several other Eagles".

The 'Berlin Post' (as quoted by the 'Times' of September 8, 1883, reprinted Zoologist, vii. p. 422) relates a story of an Imperial Eagle (qu. *A. imperialis* or *A. adalberti*?) taken that year in Brandenburg ringed with a plate on which was engraved "H. Ks. O. K." and underneath "Eperjes," and on the other side "10. 9. 1827," which makes the bird 56 years old. Eperjes is in Upper Hungary, and in the opinion of Dr. J. von Madarász the first two letters stand for the owner's name.

Long ago there was at Vienna a reputed Eagle of 104, which has done duty in many books without reference to the original passage recording it. It will be found in John G. Keysler's 'Travels through Germany' (i. p. 70), where the Eagle is affirmed to have lived in confinement from 1615 to 1719. Keysler's work was first published in Germany, and the history of this Eagle seems to have been told him at Munich in 1829.

In the 'Gentleman's Magazine' for 1793, p. 181, it is related how a Hawk, probably *Falco peregrinus*, had been found at the Cape of Good Hope and brought from thence by one of the India ships, having on its neck a good collar thus engraved: "This goodlie Hawk doth belong to his Most Excellent Majestie James, King of England. A. D. 1610". The anecdote is barely credible, for a Hawk with a ring round its neck—a primitive method (Norw. N. Tr. iii. p. 88)—is not very likely to have lived 180 years or to have flown 6500 miles. Another Falcon is said to have attained 162 (Knauer, *Der Natur-*

historiker)', but such statements require to be attested.

PELECANIDÆ.

Willughby, on the authority of Schaad, tells the readers of a Pelican of 40 in the Duke of Bavaria's court, while Aldrovandus tells of another at Mechlin, in Brabant, known to be 50, and believed to be 80 ('Ornithologia,' xix. p. 22.) Turner also tells of one of 50, perhaps the same (Hist. Avium). Pelicans have been known to live a long time in various zoological gardens, even where they have no sheet of water to sail about on. We learn, for instance, that "of a great number of Pelicans kept in the menagerie at Versailles none died in the space of 12 years" (Mém. de l'Acad. des Sci.), a record which *Pelecanus onocrotalus*, *P. conspicillatus*, and *P. crispus*, the property of the Zoological Society of London, can easily beat, under the guardianship of their watchful keeper, T. Church.

At Rotterdam there is a Pelican of 41 still living (fide Dr. Büttikofer).

But enough has been said to show the considerable duration of life of the *Pelecanidæ*.

ARDEIDÆ.

Hérons have been often ringed by hawking clubs and afterwards retaken, affording well attested cases of longevity in a wild state and of migratory wanderings as well (cf. 'Birds of Norfolk,' ii. p. 139; 'Birds of Suffolk,' p. 158). It will be sufficient to give the particulars of the two oldest only. In the 'Annual Register' for 1767, under date July 7th, readers are informed that "As the Prince Stadtholder [of Holland] was taking the diversion of hawking, he caught a Heron with a brass inscription round its legs, setting forth that it had been taken and released by the Elector of Cologne in the year 1737," i. e. a Heron of 30 years of age. But nine years before that, viz., in the spring of 1728, a Heron was taken in Bavaria which had been ringed 60 years before by Duke Ferdinand the Elector, according to Keysler's 'Travels through Germany,' i. p. 70. As Keysler says he was at Starrenberg Palace the year following, it was no doubt there that he got the particulars first-hand. The Crane has lived to be 40, and my father has recorded a Black Stork of 30.

ANSERES.

Tame Geese are long-lived and their ages easy to verify, and by inference wild Geese would be long-lived. Two centuries ago Francis Willughby had the story of a domestic Goose which was 80, and was then killed for its destructiveness though yet sound and lusty, from a friend who is spoken of in two places as "of very good credit" and "undoubted fidelity" ('Ornithology,' pp. 14, 358). There is really no reason whatever to question it, especially as Buffon considers that a Goose once reached 100, and Pennant was equally aware of what he terms a vast longevity. There was a Goose at the Sarcen's Head Inn at Paisley, in Renfrew, N. B., computed to be nearly 100 (R. Lee).

Mute Swans have for centuries had the credit of turning into 'Methuselahs,' even to the extent of 300 years (Aldrovandus), and Norfolk

waters have produced some supposed patriarchs, one of which is in Norwich Museum. Naumann alludes to Swans from 50 to 100 years old, and Broderip, in his 'Zoological Recreations,' after citing a Swan at Shepperton on the Thames supposed to be over 100, and another of 50, quotes from the 'Morning Post' the following:—"The beginning of last week [July 1840] an exceedingly well-known character departed this life, namely Old Jack, the gigantic and venerable Swan with which the public have been so long acquainted on the canal in the enclosure of St. James's Park, at the advanced age of 70 years. Old Jack was hatched some time about the year 1770 on the piece of water attached to Buckingham House."

It is placed on record that a [Mute] Swan died at Alkmaar, a town near Amsterdam, in 1675, which bore a metal collar on which was inscribed the date "1573," indicating a life of 102 years. After considerable search to verify this story, it has been satisfactorily traced by Mr. F. E. Blaauw and Mr. Bruinvis to the original record in the 'Chronyk van Nedenblik door Dirk Burger van Schoorl' (1762).

At the ancient Swannery at Abbotsbury, in Dorsetshire, the Mute Swans have the reputation of being capable of living 150 years, but it does not appear that any attempt has been made to prove it by ringing them by the present Earl or his predecessors. *Cygnus atratus* and *C. buccinator* have been kept to 18, and *C. musicus* to 12 years. The oldest Duck I shall have to quote was only 29, but Icelanders have asserted that Eider Ducks have been known to live 100 years (Olafsen and Povelsen).

DIOMEDEIDÆ.

I am indebted to Mr. H. Grönvold of The Natural History Museum for news of an Albatross of about 46, on the authority of a Japanese newspaper called the 'Hogo News,' and for a translation of the narrative of its capture. The Albatross was taken by the ship 'Duchess of Argyll,' Capt. Hoard, near Cape Horn, with a compass-case attached to its neck, containing the information that it had been previously caught in the middle of the North Atlantic by an American vessel, the 'Columbus,' on May 8, 1840. A new case was affixed, and it was again dated and released, in January or February, 1887. As has been already mentioned, *Diomedea nigripes* has the power of going a very long time without food.

The kind assistance of Dr. Büttikofer, Mr. Meade-Waldo, Mr. Grönvold, and Dr. A. G. Butler has been rendered to enable me to compile the following List of 75 species, and I am especially indebted to Dr. Paul Leverkühn of Sofia, Mr. F. E. Blaauw, of Hilversum, C.M.Z.S., and Prof. Newton for their help. Where the words "still alive" are added, they mean living at the age here given. The sex has been added wherever obtainable, because Brehm thinks there are more male birds than females, and it may be that Nature, to compensate the balance, gives longer life to the female. The three oldest birds of which the sex is known were females, viz: +, *Anser domesticus*, of 80, ♀, *Bubo maximus*, of 68; ♀, *Coracopsis vasa*, of 54.

Name of Species.	Number of years old.	Authority.
Song-Thrush	17	A. G. Butler, F.Z.S.
<i>Turdus musicus</i> .	15	Mr. Bilham Cromer.
Blackbird.....	20½	Thompson's 'Birds of Ireland,'
<i>Turdus merula</i> .	still alive.	i. p. 148.
“ “	♂ 20	Ditto, i. p. 147.
Blue Thrush	24	H. A. Macpherson, et 'Avicula,'
<i>Monticola cyaneus</i> .		1897, p. 147.
Nightingale.....	25	Dr. Bechstein's 'Cage-birds,' p.
<i>Daudias luscinia</i> .		363.
“ “	15	Ditto ditto
“ “	10	'Zoologist,' 1865, p. 9725.
House-Martin	9	'Zoologist,' 1876, p. 4957.
<i>Chelidon urbana</i> .		
White-headed Manikin.....	♀ 18	A. G. Butler, F.Z.S.
<i>Munia maja</i> .	♂ 17	Ditto
Goldfinch.....	23	C. Gesner, Hist. Av. (1555).
<i>Carduelis elegans</i> .	17	'Birds of Ireland,' iii. p. 467.
Canary.....	20	Zool. 1886, p. 478.
<i>Serinus canarius</i> .	18	J. Mackley, Norwich.
“ “	17	'The Field,' June 8, 1867.
Brown Linnet.....	♂ 17	Zool. 1886, p. 478.
<i>Linota cannabina</i> .	14	G. Thirkettle.

Name of Species.	Number of years old.	Authority.
Bullfinch..... <i>Pyrrhula europæa.</i>	19 9	'Birds of Ireland,' iii. p. 467. G. Thirkettle.
Cardinal Grosbeak..... <i>Cardinalis virginianus.</i>	21 14	Wilson, Am. Ornith. ii. p. 275. Fox, Newcastle Mus. p. 153.
Great Bird of Paradise..... <i>Paradisæa apoda.</i>	♂ 15	P. Z. S. 1840, p. 13.
Raven..... <i>Corvus corax.</i>	69	Dressers 'Birds of Europe,' iv. p. 569.
" "	50	Zool. 1882, p. 45.
" "	24	Dr. J. Büttikofer.
Piping Crow..... <i>Gymnorhina tibicen.</i>	28	Rotterdam Zool. Gardens, J. Büttikofer.
" "	♂ 26	'The Field', Nov. 12, 1898.
Magpie..... <i>Pica rustica</i>	21	Zool. 1850, p. 2824.
Chough..... <i>Pyrrhocorax graculus.</i>	17 16	Zool. 1876, p. 4924. Ditto.
Skylark..... <i>Alauda arvensis.</i>	24	Raczynski, Hist. Nat. Poloniae, 1745.
" "	20	Zool. 1865, p. 9604.
Laughing Kingfisher..... <i>Dacelo gigantea.</i>	11	Rotterdam Zool. Gardens, J. Büttikofer.
Australian Nightjar..... <i>Podargus cuculieri</i>	8½	'The Field,' June 19, 1869.
Cuckoo..... <i>Cuculus canorus.</i>	25 8	Norwich Nat. Tr. vi. p. 379. Ditto.
Bare-eyed Cockatoo..... <i>Cacatua gymnopsis.</i>	32 † 15	London Zool. Gardens. F. E. Blaauw, C.M.Z.S.
Sulphur-crested Cockatoo..... <i>Cacatua galerita.</i>	81?	'Birds of Ireland,' iii. p. 467.
" "	80	'The Field', Nov. 12, 1898.
" "	50	L. Travis, Bury.
" "	45	'The Field', Nov. 12, 1898.
Gray Parrot..... <i>Psittacus erithacus.</i>	50 40	E. T. Roberts, Norwich. Rowley, Orn. Misc. i. p. 172.
Greater Vasa Parrot..... <i>Caracopsis vasa.</i>	♀ 54	P. Z. S. 1884, p. 562, P. L. Selater.
Amazon Parrot..... <i>Chrysolis amazonica.</i>	30 24	In Norwich Museum (<i>Cubitt</i>). A. G. Butler, F.Z.S.
Blue Macaw..... <i>Ara macao.</i>	- 64	'Revue et Magasin de Zool.'
" "	♀ 21	1864, p. 409.
" "	17	'The Field,' March 3, 1894. J. Büttikofer.
Eagle-Owl..... <i>Bubo maximus.</i>	♀ 68 still alive.	E. Meade-Waldo, F.Z.S.
" "	♂ 53	Ditto.
" "	♀ 34	'Birds of Norfolk,' i. p. 47.
" "	28	The late W. E. Beckwith.

Name of Species.	Number of years old.	Authority.
Ceylonese Fish-Owl..... <i>Kelupa ceylonensis.</i>	39	Amsterdam Zool. Gardens, F. E. Blaauw.
Tawny Owl..... <i>Syrnium aluco.</i>	26 21	In the Norwich Museum. 'The Naturalist,' 1897, p. 131, and 1898, p. 269.
" "	18	Mason's 'Hist. of Norfolk,' App
Condor..... <i>Sarcorhamphus gryphus.</i>	52 still alive. 9 $\frac{1}{4}$	Amsterdam Zool. Gardens, F. E. Blaauw. 'Auk,' 1885, p. 171.
Griffon Vulture..... <i>Gyps fulvus.</i>	4 34	London Zool. Gardens ('Zoo- logist,' 1861, p. 7543).
Sociable Vulture..... <i>Otogyps auricularis.</i>	♀ 24 12	J. H. Gurney, sen., 'Ibis,' 1877, p. 257. J. Büttikofer.
Cinereous Vulture..... <i>Fultur monachus.</i>	32 still alive.	Amsterdam Zool. Gardens, F. E. Blaauw (cf. Norwich Nat. Tr. iv. p. 573).
Sea-Eagle..... <i>Haliaeetus albicilla.</i>	♀ 42 36	Lord Lilford, Norwich Nat. Tr. iv. p. 564. J. H. Gurney, sen.
Spanish Imperial Eagle..... <i>Aquila adalberti.</i>	27 26 still alive.	Lord Lilford (cf. Norwich Nat. Tr. iv. p. 566). J. H. G.
Golden Eagle..... <i>Aquila chrysaetus.</i>	46 41 28	'The Field,' May 11th, 1867. Pennant, Brit. Zool. i. p. 165. J. H. Gurney, sen.
Bateleur Eagle..... <i>Helolarsus cucudatus.</i>	55 still alive. 20	Amsterdam Zool. Gardens, F. E. Blaauw. J. H. Gurney, sen.
South-American Caracara..... <i>Polyborus tharus.</i>	35	London Zool. Gardens, Edward Blyth.
Red Kite..... <i>Milvus iclinus.</i>	♀ 38 ♀ 21 ♀ 27	Zool. 1865, p. 9686. Ditto. J. H. Gurney, sen.
Yellow-billed Kite..... <i>Milvus ægyptius.</i>	♀ 28 13 still alive.	J. H. Gurney, sen. J. Büttikofer.
White Pelican..... <i>Pelecanus onocrotalus.</i>	41 still alive. 40	Rotterdam Zool. Gardens, J. Büttikofer.
" "	23	Willughby's 'Ornithology,' p. 328. London Zool. Gardens.
Crested Pelican..... <i>Pelecanus crispus.</i>	29 still alive. 27 18	London Zool. Gardens. Rotterdam Zool. Gardens. Ditto.
Cormorant..... <i>Phalacrocorax carbo.</i>	23	'British Birds,' by H. O. Forbes and others, iii. p. 167; 'The Field,' May 27, 1882.
American Darter..... <i>Plotus anhinga.</i>	12	Rotterdam Zool. Gardens, J. Büttikofer.
Green-backed Porphyrio..... <i>Porphyrio smaragdnotus.</i>	19 14	'Ibis,' 1889, p. 398. Ditto.

Name of Species.	Number of years old.	Authority.
White-necked Crane..... <i>Anthropoides leucauchen.</i>	28	Amsterdam Zool. Gardens. F. E. Blaauw.
Common Crane..... <i>Grus communis.</i>	40	London Zool. Gardens, T. Church [<i>c.</i> 'Field,' Jan. 2, 1875].
Heron..... <i>Ardea cinerea.</i>	60	Keysler's 'Travels,' i. p. 70.
" "	30	'Annual Register,' July 7th, 1767.
" "	22	J. Büttikofer.
Black Stork..... <i>Ciconia nigra.</i>	30	J. H. Gurney, sen., in Dresser's 'B. of Europe,' vi. p. 316.
American Jabiru..... <i>Mycteria americana.</i>	36	Amsterdam Zool. Gardens, F. E. Blaauw.
Sacred Ibis..... <i>Ibis æthiopica.</i>	20	London Zool. Gardens, T. Church.
" "	still alive.	J. Büttikofer.
" "	11	
Boatbill..... <i>Cancroma cochlearia.</i>	18	Rotterdam Zool. Gardens,
" "	still alive.	J. Büttikofer.
Domestic Goose..... <i>Anser cinereus, var.</i>	♀ 80	Willughby's 'Ornithology', 'Birds of Ireland,' iii. p. 467.
" "	45	'City Press,' no date.
" "	35	'Domestic Poultry,' p. 152.
" "	♀ 31	
Cereopsis Goose..... <i>Cereopsis novæ-hollandiæ.</i>	33	Rotterdam Zool. Gardens, J. Büttikofer.
Bernacle Goose..... <i>Bernicla leucopsis.</i>	32	Yarrell, B. B. 4th ed. iv. p. 228.
Mute Swan..... <i>Cygnus olor.</i>	70	'Zoological Recreations,' by W. J. Broderip, p. 164.
Nyroca Duck..... <i>Fuligula nyroca.</i>	♂ 15	J. H. Gurney, sen.
" "	13	J. Büttikofer.
" "	11	Ditto.
Pochard..... <i>Fuligula ferina.</i>	♀ 20	E. Meade-Waldo.
" "	still alive.	
" "	♀ 17	Zool. 1893, p. 148.
" "	♂ 13	J. H. Gurney, sen.
Wigeon..... <i>Mareca penelope.</i>	♂ 23	E. Meade-Waldo.
" "	22	'The Field,' May 25th, 1867
" "	18	Ditto. ditto.
Wild Duck..... <i>Anas boschas.</i>	♂ 29?	'Birds of Norfolk,' iii. p. 170.
" "	22	J. H. G., Zool. 1875, p. 4541.
" "	♀ 16	J. Hancock.
Collared Dove..... <i>Turtur risorius.</i>	♂ 40	F. E. Blaauw.
" "	♀ 35	Ditto.
" "	♂ 33	'The Field,' Dec. 12th, 1896.
" "	30	Ditto. ditto.
Tame Pigeon..... <i>Columba livia, var.</i>	♂ 28½	'The Field,' Feb. 9th, 1895. [<i>C.</i> Macgillivray, B. B. i. p. 279].
Silver Pheasant..... <i>Euplocamus nychemerus.</i>	♂ 21	'Birds of Ireland,' p. 27.

Name of Species.	Number of years old.	Authority.
Domestic Fowl..... <i>Gallus domesticus.</i>	♂ 30	'The Newcastle Museum,' by G. T. Fox, p. 147.
" "	♂ 25	Proc. Wernerian N. H. Soc. iii. p. 206.
" "	24	Daniel's 'Rural Sports,' iii. p. 21.
Temminck's Tragopan..... <i>Cerionis temmincki.</i>	♂ 14	F. E. Blaauw.
Oyster-catcher..... <i>Hamulopus ostralegus.</i>	30	Zool. 1846, p. 1501.
Ruff..... <i>Machetes pugnax.</i>	10	London Zool. Gardens, J. Waterman.
Lesser Black-back Gull..... <i>Larus fuscus.</i>	♂ 31	Hancock's 'B. of Northumber- land,' p. 139.
" "	30	Ditto, ditto.
" "	♂ 22 still alive.	Zool. 1865, p. 9402.
Herring Gull..... <i>Larus argentatus.</i>	44 21	'Science Gossip,' 1876, p. 238. Sharp's Hist. of Hartlepool,' App.
Great Skua..... <i>Stercorarius calarrhactes?</i>	24	Yarrell, 'Brit. B.' 4th ed. iii. p. 667.
Albatross..... <i>Diomedea exulans.</i>	46	C. Rosenberg, Mitt. des orn. Ver. in Wien, 24 Mar. 1887, per H. Gronvold.
Apteryx..... <i>Apteryx australis.</i>	♀ 20	London Zool. Gardens, C. Bart- lett.
Westermann's Cassowary..... <i>Cusuarus westermanni.</i>	26 still alive.	Rotterdam Zool. Gardens, J. Buttikofer.
Emu..... <i>Dromæus nova-hollandia.</i>	28	Rotterdam Zool. Gardens, J. Buttikofer.
" "	22	Ditto, ditto.
" "	20	Ditto, ditto.
		[Cf. Norwich Nat. Tr. vi. p. 350.]

It will be seen how many families are unrepresented in the preceding list; for example, there are no *Laniidae*, *Lariidae*, *Motacillidae*, *Sylviidae*, *Sturnidae*, *Oriolidae*, *Paridae*, *Picidae*, or *Capitonidae*, and no marine or diving-birds such as *Podicipedidae*, *Alcidae*, *Colymbidae*, *Procellariidae*, and *Sterninae*. Neither are there any *Odidae*, though Goldsmith says that Great Bustards usually live 15 years, probably quoting somebody; and it might have been expected that someone would have put forward cases of longevity among the *Tetraonidae*.

To draw any comparison between birds and mammals is not very easy. Birds attain their growth of stature much quicker than most of the Mammalia, and there seems good reason for thinking they can live as long; but some writers, including Edward Blyth, have held that they cannot. It has been said that in a general way the age of beasts is equal to six times the period which they take to grow to full growth of stature, and there may be truth in this axiom,

but it cannot apply to birds. It seems to be quite clearly proved that some tame elephants have reached one hundred years ('The Field,' March 11th, 1871, and January 29th, 1898), and evidence points to the probability of their having reached two hundred in a wild state. Horses have not much chance of running to the length of their tether, but a barge-horse was sixty-one (*H. Youatt*), a Galloway pony at Stilworthy was 60, and a Shetland pony was 42. A Pomeranian dog was 19 (Zool. 1878, p. 100), and another dog 22 (*Youatt*), while Mr. A. Patterson, of Yarmouth, had a cat which was 18 years old. In the London Zoological Gardens, according to Mr. Cornish, an Indian rhinoceros attained to 37, and a Polar bear to 34; while in 1869 a relative of Dr. Paul Leverkühn's shot a deer which for 40 years had carried a little metal box with the date "April, 1829" inside it, proving its age.

It is beyond question that fishes, such as, for example, pike and carp, can attain to a very great age, and so can tortoises. The Hon.

Walter Rothschild deposited in the Zoological Gardens a *Testudo daudini* 150 years old; and Gilbert White's *T. marginata* was 54; but one in Norfolk was asserted to be 100 (Norwich Nat. Tr. ii. pp. 164, 174). In the Natural History Museum there is an oil-painting of a pike which had been in a pool 267 years having been originally caught by the Emperor Frederick II in 1230. The reptile-house at the Zoological Gardens is stated to contain a Mississippi alligator of 20, and until lately a Reticulated Python of the same age.

Prof. Newton, to whose assistance I am in many ways indebted, has drawn attention to Dr. Weismann's 'Essays on Heredity,' particularly one on the duration of animal life, where the uniformity with which birds maintain their numbers, which I have before referred to, is dwelt upon, and several other questions bearing on the age of birds. Dr. Weismann is of opinion

that all birds and mammals outlive the period of reproduction, but in the case of birds the facts collected rather show the contrary. He also thinks that only in the largest mammalia—whales and elephants is the duration of life equal to the longest-lived birds, but we require more facts.

So far as birds are concerned, the points on which information is wanted are principally:—

1. Are birds of some families longer-lived than those of others?
2. Do female birds live longer than males?
3. Are birds which are long in their incubation therefore long-lived?
4. Do large birds live longer than small ones?
5. Do birds in general live as long as mammals?
6. Do birds which lay only one egg live longer than birds which lay ten?

THE SHARP-TAILED SPARROW IN MASSACHUSETTS.

BY FOSTER H. BRACKETT, Boston, Mass.

The Sharp-tailed Sparrow is probably one of the least known of the common birds of Massachusetts. Being very locally distributed during the breeding season, confined to the salt-water marshes during the migrations, and a bird of very retiring habits, it is very easily overlooked. By some it is considered a rare bird, but there are a number of marshes about Boston where it breeds regularly; and on the South River marshes in Marshfield, where most of these observations were made, it is very abundant.

This sparrow reaches Massachusetts from the south about the middle of May, the 20th being the first date I have recorded, although it may occur a few days earlier. When they first arrive the marshes are brown and bare, and the birds are then found along the small creeks and ditches running under the overhanging banks or skulking among the dry reeds, apparently anxious to escape observation. If by chance one is found away from the protection of the banks or rushes, it endeavors to conceal itself in the scanty cover, running rapidly through the short grass, looking for a hiding place, and finally disappearing wherever a clump of grass or bunch of reeds gives a little thicker cover, returning to the shelter of the creeks and ditches as soon as possible.

At first the birds are few in numbers, but others soon arrive, and then the marshes are literally alive with them. They can be flushed every few yards from the patches of new growth which has now attained a height of five or six inches.

The Acadian Sparrows arrive about the same time as the other Sharp-tailed Sparrows, and are found associated with them until about June 3, when they decrease in numbers, and finally disappear, passing to their breeding places further north.

The last of May or first of June, the Sharp-tailed Sparrows leave the marshes, at the mouth of the river, and move to higher and drier portions further up the river, where there is less danger of high tides. Here they make their home, during the months of June and July,

building their nests and raising their young, and are seldom seen, until the young are able to leave the nest, unless one goes especially in search of them.

During the breeding season, the males make a brave but rather unsuccessful attempt at singing. Perched upon a dried weed-stalk, reed or other convenient perch, they utter a few short gasping notes, or hovering a few feet above the grass they gasp out a husky sputtering warble and immediately drop into the grass as if stage struck or ashamed of their performance. The notes are so feeble that they can scarcely be heard more than forty or fifty feet distant, and the performance seems more like a pantomime than a bona fide attempt at singing.

At this season they spend a great deal of time on the ground, and are very reluctant to take wing, doing so only when closely pressed, and when all means of concealment fails. So closely do they cling to their cover that one can almost step on them before they will fly, and then they will drop into the first available place of concealment, to run rapidly through the grass and rushes to a more secure retreat.

Their favorite breeding places are those parts of the marshes where the ground is very soft and yielding, and will not bear the weight of a man or large animal. Here they build their nests, composed of dried grasses and lined with a finer quality of the same material, carefully concealing them in the matted grass, and frequently entering them by a tunnel or passage two or three feet in length.

In marshes where there are no boggy places the nests are generally placed in tussocks of grass along the banks of ditches, concealed as before by the overhanging grass. The eggs are usually four or five in number, varying from a grayish-white to a greenish-white, and finely speckled with brown. The first set is laid early in June, and there is often a second set about the middle of July.

About the 10th of July the birds appear among the rushes and tall grass along the river bank, accompanied by the young, which are curious

looking little specimens, with short stubby tails, imperfectly feathered heads and wings, and with legs and feet apparently several sizes too large for them.

They have not as yet acquired much skill in flying, and go flopping along for a few yards, and then tumble in the first long grass that comes handy; but they are experts in running and climbing, and seem to understand how to hide themselves as well as the old birds.

After spending a couple of weeks along the banks of the upper part of the river they gradually move down toward its mouth, and by August 10th, they are abundant all over the marshes. They are now very tame and unsuspicious, and can be easily approached and studied.

At low tide they spend much of their time hunting about the drift left on the river bank, and running over the mud of the creeks and little inlets in search of small shells or other marine life left by the tide; but as the tide rises they are driven to the reeds and tall grass where they rock and swing, run up and slide down the smooth grass stems, and go through all sorts of acrobatic feats. In some cases they use their tails to assist in climbing about, but at other

times they rely entirely upon the strength of their feet and legs.

In flying they keep very low, seldom over two feet above the grass, and in crossing the river they generally drop down to within a few inches of the water, rising again if necessary as they reach the opposite shore, and disappear at once in the thick cover. But if one keeps quiet, they are pretty sure to be seen soon, taking a sly peep from the top of some thick clump of grass or patch of reeds. As a rule their flight is regular, and not so jerky as that of many of the sparrows, but occasionally they make one or two sharp turns as if undecided where to go, and are very apt to take a quick turn to the right or left just before disappearing in the grass.

If wounded they immediately make for the longest and thickest cover, and it is almost impossible to find them again.

When I leave my little friends about the middle of September, they are still in full possession of the river banks and marshes; but when I visit them again in the middle of October, they have diminished in numbers, and by the first of November they have departed for their southern home.



OSPREY NEST AT TOP OF POLE IN SWANSEA, MASS.

The contributor is unknown to the editor. He would oblige the Osprey Company by communicating his name and information as to the nest.

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NOTICE.

Dr. Cones has retired from the editorship of THE OSPREY, and Dr. Gill, who had withdrawn his name from the April and May numbers, assumes control. All communications of every nature and description editorial, exchanges, books for review, and business generally should be addressed hereafter *exclusively* to THE OSPREY Co., 321 and 323 1½ Street, Washington, D. C.

ANNOUNCEMENT.

As advertised at the head of the first page and editorial page of each number, THE OSPREY will take a vacation during July and August in accordance with the precedent established before the present Company took possession. If the announcement had not been made in the number of the present volume published before any idea of purchasing the Magazine was entertained, such a recess would not have been indulged in, but the announcement having been made we feel impelled to act upon it.

The publication will be resumed with the September number, and conducted in such a manner as not to infringe on the rights or feelings of others, and in harmony with all our scientific brethren. Care will be taken that the contributions to the Magazine shall be worthy of a place in it, provision will be made for the exposition of the characteristic features of the avifaunas of our new possessions in the Atlantic as well as Pacific oceans, and current news of interest to ornithologists will be given

in the successive numbers. Pertinent illustrations will also be increased.

THE LONGEVITY OF BIRDS AND OTHER VERTEBRATES.

"Every species of animal has its determined duration of life. This was well recognized by Buffon; he even sought, and was, I believe the first who did so, the physiological law of this duration."

Such was the declaration of Flourens, and the thesis was sustained at length in his work, first published in 1842, entitled "*De la Longévité Humaine*."

The generalization was not restricted or qualified as applicable only to any one class or group of animals. The decision of that "duration of life" was even attempted, and a quasi-law was enunciated. It was an idea of Buffon's, quoted by Flourens, that the "duration of life, to some extent, may be measured by the time of growth; an animal which acquires all its growth in a short time, perishes very much sooner than another which is longer in growing."

The stag was taken as an illustration.

As the stag, says Buffon in his account of the animal, "is five or six years in growing, it also lives seven times five or six years; that is, thirty-five or forty years."

Flourens comments on Buffon's idea in the following terms:

"The relation pointed out by Buffon is very near the truth. He says that every animal lives nearly six or seven times as long as the term of his growth. The true relation is five, or very nearly.

"Man being twenty years growing, lives five times twenty, that is to say, one hundred years. The camel is eight years growing, and lives five times eight, or forty years. The horse is five years growing, and he lives five times five, that is to say, twenty-five years; and so with the rest.

"We have then, finally, a precise characteristic which gives us accurately the duration of growth; the duration of growth gives us the duration of life. All the phenomena of life are united by the following chain of relations;—the duration of life is given by the duration of growth; the duration of growth is given by the duration of gestation; the duration of gestation, by the height etc., etc. The larger the animal, the longer is the time of gestation. The gestation of the rabbit is thirty days; that of man is

nine months; that of the elephant is nearly two years, etc."

Flourens postulates as a criterion of maturity the union with the bones of their epiphyses.

"As long as the bones are not united to their epiphyses, the animal grows; when once the bones and their epiphyses are united, the animal grows no more." In man this union is effected "at twenty years of age" says Flourens.

The subject of mammalian longevity has also been the subject of discussion very recently in *Nature*, for January 5, March 23, and May 11. A curve of life has been projected by Dr. W. Ainslie Hollis (January 5), correlating the "years of adolescence" with the "years of potential longevity", and his conclusions are enunciated in the proposition: The ratio of length of adolescence to length of life in the shortest lived mammals is proportionately less than it is in longer lived mammals".

Mr. Ernest D. Bell (March 23) follows with the proposition that "the full term of life in a mammalian species is equal to ten and a half times the period of maturity divided by the cube root of the period (of maturity)" and gives a mathematical formula embodying the proposition. Soon afterwards (May 11), he thought the formula might be advantageously modified by substituting 10.1 for 10.5, the full term of life then being supposed to be "10.1 times the cubic root of the square of the period."

Dr. Hollis admits that the formula confirms his opinion, and adds some cases of domestic animals which "conform to the requirements of the curve very closely". They are named below.

	Observed length of Adolescence.	Length of Life.	
		Observed by curve.	Computed by form.
Guinea-pig.....	7 months.	6-7 yrs	7 yrs
English Greyhound...	1 year.	12 "	12 "
Cat (Miyart).....	1 "	12 "	12 "
Cat (Jennings).....	2 "	15 "	18 "
Hog.....	5 "	30 "	31 "
English Hunter.....	6 1/4 "	35 "	35 "

Dr. Hollis adds that "the age at which growth ceases in man differs considerably in different individuals of the same race". He had "in skiagraphs observed a difference of upwards of three years in the ages of different subjects, at which osseous union of the epiphyses to the finger-bones was effected." Dr. Hollis thinks that "the age of twenty-five years for man's cessation of growth is therefore only an average one", and in his revised curve he "reduced the age of man from eighty to seventy-five years."

The difference between Flourens and Dr. Hollis in estimating the longevity of man of course results from their difference of meaning as to longevity. Flourens meant potential longevity; longevity very rarely obtained, and only under exceptional circumstances. Dr. Hollis restricted it to average or ordinary longevity.

There is unquestionably a fallacy inherent in all the "laws" or generalizations thus proposed: that fallacy is the assumption that a rule which holds good for some of a class must hold good for all. There is no reason to suppose that any one of the "laws" or rules is of universal applicability for any single class mammalian or other; much less for all vertebrates. Nevertheless, the tendency among terrestrial placental mammals appears to be decided and of great interest.

It is very desirable to know whether any such relations of time as prevail for many terrestrial mammals at least exist among birds. Favorites as they are, of so many lovers of nature, very little that is exact is known respecting the duration of their life or the epochs of that life. Flourens admitted his ignorance. "I know nothing certain of the duration of life in birds," says he. Others who knew less professed to know more. Some of their speculations or assumptions are summarized by Flourens.

"Hesiod" says Pliny, "attributes to the rook nine times our life; to the stag four times the life of the rook; and three times the life of the stag to the raven. Hesiodus cornici novem nostras attribuit ietates, quadruplum ejus cervis, id triplicatum corvis".

"Buffon thus remarks upon this passage in Pliny: In taking the age of a man at only thirty years, this will give nine times thirty, or two hundred and seventy years for the rook, one thousand and eighty for the stag, and three thousand two hundred and forty for the raven.

"In reducing the life of man to ten years, this will give ninety years for the rook, three hundred and sixty for the stag, and one thousand and eighty for the raven, which is still extravagant. The only way to give a rational meaning to this passage, is to render the *genera* of Hesiod, and the *ætas* of Pliny by years; then the life of the rook is diminished to nine years, that of the stag to thirty-six, and that of the raven to one hundred and eighty, as is provided by observation".

Buffon, adds Flourens, "is quite at liberty to comment upon Hesiod and Pliny as he pleases, but he ought, at least, to tell us upon what facts

he has founded his assertion, that the hundred and eighty years of the raven are proved by observation."

Flourens continues: "Fontenelle quietly narrates (for in this matter, he had almost the right not to be astonished at anything,) the history of a parrot that lived, he says, nearly a hundred and twenty years. This parrot was brought to Florence in 1833, by the Grand Duchess de la Rovère d'Urbino, when she came to marry the Grand Duke Ferdinand, and the princess said then that this parrot was the oldest member of her family; it lived at Florence nearly a hundred years."

"When we give to it, on the faith of the words of the Grand Duchess," said Fontenelle, "about twenty years, it will then have lived a hundred and twenty years. This is, perhaps, not the longest term of life of these animals; but it is at least certain, from this example, that they can attain it".

"The swan has the advantage," said Buffon, "of enjoying to an extremely advanced age its quiet and charming existence. Every observer accords to it a very long life; some even have gone so far as to say three hundred years, which is doubtless an exaggeration; but Willoughby, having seen a goose, which, upon sure evidence had lived a hundred years, did not hesitate to conclude from this case, that the life of the swan may and ought to be longer, both because it is larger, and because it takes longer time to hatch its eggs; incubation in birds corresponding to the time of gestation in animals, and, perhaps, having some relation to the time of growth of the body, which is proportionate to the duration of life. The swan is more than two years in growing, and this is a long time, for in birds the entire development of the body is much quicker than in quadrupeds".

"Willoughby infers, then, the long life of the swan from that of the goose, which could be proved to have lived a hundred years."

"This certain proof of a hundred years, in the case of the goose, reminds us of the hundred and eighty years of the raven, proved by observation, which Buffon speaks of".

In all this, there was nothing fortified by exact dates or precise references to the sources of information. Many data were scattered through the voluminous literature of ornithology but no one had brought such data together. At length, Mr. J. H. Gurney, the distinguished ornithologist of Norwich, (England,) undertook the task, and the memoir originally published

in *The Ibis* and now republished, with many modifications and additions, in *THE OSPREY* is the result. The enumeration is not exhaustive, but it is very useful, and furnishes a basis for generalization, to some extent, at least.

Mr. Gurney passes over in silence the records of Buffon and others mentioned by Flourens. Doubtless he regards them as unverified statements not worthy of association with those he tabulates.

How considerable the advance in Mr. Gurney's article is may be inferred from the fact that in Prof. Ray Lankester's work "*On Comparative Longevity*" (1870) only sixteen forms were enumerated in the body of the text, (eleven on the authority of Leopold Grindon,) and most of them were queried as uncertain. Seven additional, but imperfect observations were noticed in a note communicated by Darwin.

But almost a century ago—in the closing year (1800) of the eighteenth century—a list of species whose ages had been ascertained was given by a French naturalist Daudin. In Daudin's almost forgotten work, *Traité Élémentaire et Complet d'Ornithologie*, (p. 126,) twenty-seven species are enumerated in a "*Table de la durée de la vie de quelques oiseaux*" compiled from Buffon and others. The ages assigned were in almost cases reasonable and in conformity with those since ascertained. Daudin, it is true, gives 300 years to the Swan, but he appends an exclamation of doubt "!".

It is evident that there are no such ratios between the size of a bird and its duration of life, its period of embryological development, and its period of adolescence as prevail among mammals. Nevertheless, there are indications that there is a tendency at least towards an extension of the duration of life among some large birds, as those of prey, and towards the retardation of the development of the full livery of perfect maturity. Even this, however, is not perfectly proved, and there are indications, on the other hand, that such tendencies may be a family or group habit.

Much remains to be done yet before positive generalization can be indulged in certainly. Such observations should be made, and can be made by many ornithologists, whose opportunities for study in other directions may be limited. Let us hope that they may be attempted. It is noteworthy that in the long list of species catalogued by Mr. Gurney, only one reference is given to an American record—that

of Wilson for the Cardinal Grosbeak. The daily and weekly papers and monthlies of the country occasionally record the death or existence of a bird that has lived a long time, but no one has collected such observations or verified them. The neglect being thus signalized, and a starting point given, we await data. We invite, and will be thankful for, authenticated records of longevity or ascertained ages of any birds.

A few words may be acceptable respecting the pike mentioned by Mr. Gurney. If the case were well authenticated, Valenciennes justly conditioned, it would be very important as a positive datum in the "curious question of the longevity of animals, and especially that of fishes". Valenciennes, however, after a judicial analysis of various accounts, discredits the occurrence (Hist. Nat. Poissons, 18, 305-313). The fish, said to be 19 feet long, it was claimed had been taken in 1497, and was found with a copper ring attached to the gill indicating that it had been put in the pond in 1230-267 years before. The skeleton, said to be preserved at Mannheim, was evidently fraudulently made up, as it had many more vertebrae than it should have had.

There are few exact data respecting the age of fishes, but it is well ascertained that the

range is very great, and may be independent of size. For example, in the same family, there may be fishes which live indefinitely, and others whose cycle of existence is completed within a year. Two of these "annual fishes" occur in British waters—the *Alphya minota* and *Crystallogobius Nilssonii*. These become periodically extinct, existing for a season only in the condition of eggs. Others of the family, as the common rock or black Goby—*Gobius niger*—may live for many years.

The number of eggs or young in fishes is determined by other factors than in mammals and birds. There is an imperfect correlation between the number and the dangers to which they are subjected. Thus, some fishes which take no care of their issue and whose ova may be posited so that many fail to be impregnated, develop them by millions; those which take care of their ova have much fewer, viviparous fishes have still fewer offspring, and one group of selachians—the Devil fishes—develop a single young which is born of larger size than most other full grown fishes, and consequently is exposed to few dangers. There is also a difference in that the ova vary in number with the size of the mother, a large Codfish, for instance, having many more than a small one.

For the Future.

Numerous articles, notes, illustrations, letters, and book reviews are on hand, and some are in type, but their publication must be deferred to the future. It has been thought best not to

divide the article of Mr. Gurney and the comments on it, but to publish them together in the one and the same number.

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BLUE-FACED BOOBY, WITH NEST AND EGGS.
Photographed from life, on the Revillagigedo Islands.

EDITED BY
WALTER A. JOHNSON.
ASSOCIATED WITH
DR. ELLIOTT COUES,
WASHINGTON, D. C.

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EDITED BY

ELLIOTT COUES

AND

THEODORE GILL,
WASHINGTON, D. C.

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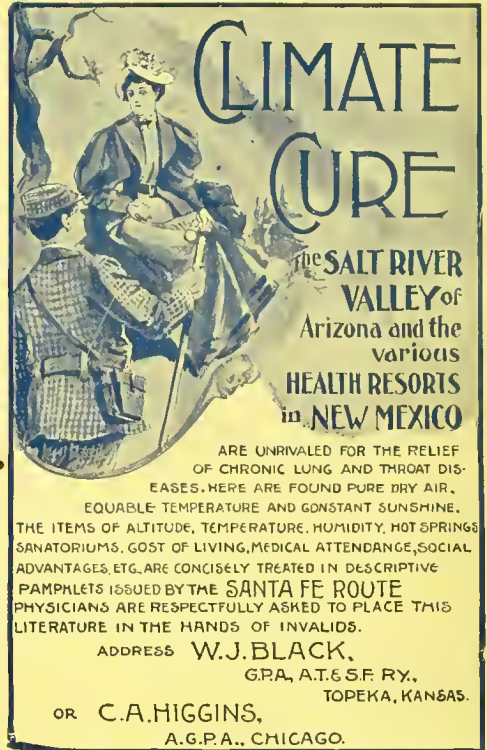
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AND

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